STIC Search Report
EIC 2800

STIC Database Tracking Number: 102016

TO: David Hogans
Location: CP4-4D14
Art Unit: 2813
8/29/2003

Case Serial Number: 09/940,638

From: Jeff Harrison
Location: STIC-EIC2800
CP4-9C18
Phone: 306-5429

Email: harrison, jeff

Search Notes

Examiner Hogans,

Re: specific Ir host with specific Pt guest

Attached are search results from the Chemical Abstracts. I tried to put the closer documents at the top of the stack of results.

Based on this, if you have questions or would like a refocused (narrower, broader) search, please contact me.

Thanks,
Jeff

Jeff Harrison
Team Leader, STIC-EIC2800
CP4-9C18, 703-306-5429

6432 102016

SEARCH REQUEST FORM Scientific and Technical Information Center - EIC2800

Rev. 8/27/01 This is an experimental format -- Please give suggestions or comments to Jeff Harrison, CP4-9C18, 306-5429.

Date 8-21-03 Serial # 09/940,638 Priority Application Date 5-29-01

Your Name David Hogans Examiner # 79069

AU 1793 Phone 305-3361 Room CP4-4014

In what format would you like your results? Paper is the default. PAPER DISK EMAIL

If submitting more than one search, please prioritize in order of need.

The EIC searcher normally will contact you before beginning a prior art search. If you would like to sit with a searcher for an interactive search, please notify one of the searchers.

Where have you searched so far on this case? 08-21-03 P03:03 IN

Circle: ~~USPT~~ DWPI ~~EPO Abs~~ ~~JPO Abs~~ IBM TDB

Other: _____

What relevant art have you found so far? Please attach pertinent citations or Information Disclosure Statements. 6,097,147 to Baldo et. al.

What types of references would you like? Please checkmark:

Primary Refs ✓ Nonpatent Literature ✓ Other _____

Secondary Refs ___ Foreign Patents ___

Teaching Refs ___

What is the topic, such as the **novelty**, motivation, utility, or other specific facets defining the desired **focus** of this search? Please include the concepts, synonyms, keywords, acronyms, registry numbers, definitions, structures, strategies, and anything else that helps to describe the topic. Please attach a copy of the abstract and pertinent claims.

Please search clms 1 & 6

novelty: spin conversion material is comprised by having Iridium or Platinum bonded to an organic material

need to find: Ir(ppy)3 aka tris(2-phenylpyridine)iridium see Fig 2 top rt.

this molecule need to be the convertible material

PtOEP (see Fig 2) needs to be the light emitting molecule i.e. - PtOEP mixed into Ir(ppy)3 → Ir(ppy)3 is the host or majority material

Staff Use Only

Searcher: HARRISON

Searcher Phone: 306-5429

Searcher Location: STIC-EIC2800, CP4-9C18

Date Searcher Picked Up: 8-29-03

Date Completed: 8-29-03

Searcher Prep/Rev Time: 90

Online Time: 90

Type of Search

Structure (#) X

Bibliographic X

Litigation ___

Fulltext ___

Patent Family ___

Other ___

Vendors

STN X

Dialog ___

Questel/Orbit ___

Lexis-Nexis ___

WWW/Internet ___

Other ___

BEST AVAILABLE COPY

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     FILE 'HCAPLUS, WPIX, JAPIO' ENTERED AT 13:28:12 ON 29 AUG 2003
L3             3 SEA ABB=ON  PLU=ON  JP2001-0161057/PRN,AP
L4               SEL PLU=ON  L3 1- IC RN :       15 TERMS
L5        379181 SEA ABB=ON  PLU=ON  L4
L6             3 SEA ABB=ON  PLU=ON  L3 AND L5

     FILE 'LCA' ENTERED AT 14:23:13 ON 29 AUG 2003
L7             4 SEA ABB=ON  PLU=ON  PHOTON##(2A)GENERAT#####
L8             6 SEA ABB=ON  PLU=ON  (SPIN OR SPINN#####)(3A)(CONVERSION OR
                 CONVERT######)
L9           320 SEA ABB=ON  PLU=ON  EXCITED(2W)STATE
L10           48 SEA ABB=ON  PLU=ON  ELECTRON HOLE
L11           57 SEA ABB=ON  PLU=ON  (ELECTRON### OR HOLE)(3A)RECOMBIN##########

L12           50 SEA ABB=ON  PLU=ON  QUANTUM(W)(NO OR NUMBER)
L13           76 SEA ABB=ON  PLU=ON  ORBITAL###(2A)(ANGULAR OR MOMENTUM) OR
                 ANGULAR MOMENTUM
L14           95 SEA ABB=ON  PLU=ON  (EXCITE## OR STATE)(3A)(SPIN OR SPINN####)

L15            0 SEA ABB=ON  PLU=ON  31248-39-2 OR 94928-86-6
L16            0 SEA ABB=ON  PLU=ON  31248-39-2
L17            0 SEA ABB=ON  PLU=ON  94928-86-6
L18           18 SEA ABB=ON  PLU=ON  HEAVY METAL AND (COMPLEX##### OR LIGAND####
                  OR ORGANOMETAL##### OR METAL#####(2A)ORGANIC)

     FILE 'REGISTRY' ENTERED AT 14:30:58 ON 29 AUG 2003
L19        20812 SEA ABB=ON  PLU=ON  IR/ELS AND C/ELS AND (COMPLEX#### OR
                 LIGAND##### OR KAPPA OR ?PORPHIN? OR ?PYRIDIN?)
L20        66973 SEA ABB=ON  PLU=ON  PT/ELS AND C/ELS AND (COMPLEX#### OR
                 LIGAND##### OR KAPPA OR PORPHIN? OR PYRIDIN?)
L21       416533 SEA ABB=ON  PLU=ON  (MN OR HG OR MO OR ND OR NI OR NB OR OS OR
                 PD OR PR OR PA OR RE OR RH OR RU)/ELS AND C/ELS AND (COMPLEX###
                 # OR LIGAND##### OR KAPPA OR PORPHIN? OR PYRIDIN?)
L22       161920 SEA ABB=ON  PLU=ON  (SM OR AG OR TA OR TB OR TL OR SN OR W OR
                 V OR ZR OR ZN)/ELS AND C/ELS AND (COMPLEX#### OR LIGAND#####
                 OR KAPPA OR PORPHIN? OR PYRIDIN?)
L23       445341 SEA ABB=ON  PLU=ON  (SB OR BI OR CD OR CE OR CR OR CO OR CU OR
                 DY OR ER OR EU OR GD OR GA OR AU OR HF OR HO OR IN OR FE OR LA
                 OR PB OR LU)/ELS AND C/ELS AND (COMPLEX#### OR LIGAND##### OR
                 KAPPA OR PORPHIN? OR PYRIDIN?)
L24         5776 SEA ABB=ON  PLU=ON  PT/ELS AND C/ELS AND (TRIS)
L25         5594 SEA ABB=ON  PLU=ON  IR/ELS AND C/ELS AND (TRIS)

     FILE 'HCAPLUS' ENTERED AT 14:38:51 ON 29 AUG 2003
L26         1963 SEA ABB=ON  PLU=ON  PHOTON##(2A)GENERAT#####
L27         1075 SEA ABB=ON  PLU=ON  (SPIN OR SPINN#####)(3A)(CONVERSION OR
                 CONVERT######)
L28       100479 SEA ABB=ON  PLU=ON  EXCITED(2W)STATE
L29        18550 SEA ABB=ON  PLU=ON  ELECTRON HOLE
L30        19891 SEA ABB=ON  PLU=ON  (ELECTRON### OR HOLE)(3A)RECOMBIN##########

L31        18057 SEA ABB=ON  PLU=ON  QUANTUM(W)(NO OR NUMBER)
L32        22756 SEA ABB=ON  PLU=ON  ORBITAL###(2A)(ANGULAR OR MOMENTUM) OR
                 ANGULAR MOMENTUM
L33        28474 SEA ABB=ON  PLU=ON  (EXCITE## OR STATE)(3A)(SPIN OR SPINN####)

L34          304 SEA ABB=ON  PLU=ON  31248-39-2 OR 94928-86-6
L35          158 SEA ABB=ON  PLU=ON  31248-39-2
L36          175 SEA ABB=ON  PLU=ON  94928-86-6
L37        10797 SEA ABB=ON  PLU=ON  HEAVY METAL AND (COMPLEX##### OR LIGAND####
                  OR ORGANOMETAL##### OR METAL#####(2A)ORGANIC)
L38         6579 SEA ABB=ON  PLU=ON  L19 OR L25
L39        23510 SEA ABB=ON  PLU=ON  L20 OR L24

     FILE 'REGISTRY' ENTERED AT 14:39:31 ON 29 AUG 2003
L40         6338 SEA ABB=ON  PLU=ON  IR/ELF
L41        16337 SEA ABB=ON  PLU=ON  PT/ELF
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     FILE 'STNGUIDE' ENTERED AT 14:39:33 ON 29 AUG 2003

     FILE 'HCAPLUS' ENTERED AT 14:40:19 ON 29 AUG 2003
L42          33 SEA ABB=ON  PLU=ON  BOND### HEAVY METAL##### OR HEAVY METAL####
                ## BOND###

     FILE 'STNGUIDE' ENTERED AT 14:40:32 ON 29 AUG 2003

     FILE 'STNGUIDE' ENTERED AT 14:41:53 ON 29 AUG 2003

     FILE 'HCAPLUS' ENTERED AT 14:44:26 ON 29 AUG 2003
L43           1 SEA ABB=ON  PLU=ON  JP2001-0161057/PRN,AP
L44             SEL PLU=ON  L43 1- IC :       1 TERM


     FILE 'HCAPLUS' ENTERED AT 14:47:52 ON 29 AUG 2003
L46         526 SEA ABB=ON  PLU=ON  L44
L47       43252 SEA ABB=ON  PLU=ON  L46 OR (H01L035-24 OR H05B033-14 OR
                H05B033-10 OR H05B033-22 OR C09K011-06)/IC OR EL DEVICE OR
                ELECTROLUMINESC###### OR ELECTR## LUMINESC########
L48           2 SEA ABB=ON  PLU=ON  L27 AND L26
L49         342 SEA ABB=ON  PLU=ON  L27 AND (L28 OR L29 OR L30 OR L31 OR L32
                OR L33)
L50           0 SEA ABB=ON  PLU=ON  L27 AND L37
L51           1 SEA ABB=ON  PLU=ON  L27 AND L35
L52           1 SEA ABB=ON  PLU=ON  L27 AND L36
L53           1 SEA ABB=ON  PLU=ON  L27 AND L38
L54           4 SEA ABB=ON  PLU=ON  L27 AND L39
L55           1 SEA ABB=ON  PLU=ON  L27 AND L42
L56       45223 SEA ABB=ON  PLU=ON  (L7 OR (L9 OR L10 OR L11 OR L12 OR L13 OR
                L14)) AND (SPIN OR SPINN#####)
L57           3 SEA ABB=ON  PLU=ON  L56 AND L34
L58           3 SEA ABB=ON  PLU=ON  L56 AND L35
L59           1 SEA ABB=ON  PLU=ON  L56 AND L36
L60          12 SEA ABB=ON  PLU=ON  L56 AND L37
L61          32 SEA ABB=ON  PLU=ON  L56 AND L38
L62          81 SEA ABB=ON  PLU=ON  L56 AND L39
L63           1 SEA ABB=ON  PLU=ON  L56 AND L42
L64          98 SEA ABB=ON  PLU=ON  L56 AND L47

     FILE 'REGISTRY' ENTERED AT 14:56:37 ON 29 AUG 2003
L65      294353 SEA ABB=ON  PLU=ON  L21 AND N/ELS
L66      113883 SEA ABB=ON  PLU=ON  L22 AND N/ELS
L67      342045 SEA ABB=ON  PLU=ON  L23 AND N/ELS
L68      598468 SEA ABB=ON  PLU=ON  PORPHINATO OR PYRIDINYL
L69       71441 SEA ABB=ON  PLU=ON  (L65 OR L66 OR L67) AND L68
L70       35400 SEA ABB=ON  PLU=ON  L69 AND (KAPPA OR TRIS)

     FILE 'HCAPLUS' ENTERED AT 14:59:06 ON 29 AUG 2003
L71       17603 SEA ABB=ON  PLU=ON  L70
L72          12 SEA ABB=ON  PLU=ON  L49 AND L71
L73        8729 SEA ABB=ON  PLU=ON  L56 AND QUANTUM
L74        2940 SEA ABB=ON  PLU=ON  L56 AND (CONVERT##### OR CONVERSION OR
                RECOMBIN#########)
L75        6016 SEA ABB=ON  PLU=ON  L56 AND ANGULAR MOMENTUM
L76        9020 SEA ABB=ON  PLU=ON  L56 AND EXCITED STATE
L77         453 SEA ABB=ON  PLU=ON  L73 AND L74
L78        1062 SEA ABB=ON  PLU=ON  L73 AND L75
L79        1447 SEA ABB=ON  PLU=ON  L73 AND L76
L80         608 SEA ABB=ON  PLU=ON  L74 AND L76
L81         102 SEA ABB=ON  PLU=ON  L74 AND L75
L82         373 SEA ABB=ON  PLU=ON  L76 AND L75
L83        3650 SEA ABB=ON  PLU=ON  (L77 OR L78 OR L79 OR L80 OR L81 OR L82)
L84          32 SEA ABB=ON  PLU=ON  L83 AND L71
L85          29 SEA ABB=ON  PLU=ON  L35 AND L36
L86           1 SEA ABB=ON  PLU=ON  (L35 OR L36) AND L83
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L87          15 SEA ABB=ON  PLU=ON  (L38 OR L39) AND L83
L88         738 SEA ABB=ON  PLU=ON  L38 AND L39
L89          51 SEA ABB=ON  PLU=ON  L88 AND L47
L90          20 SEA ABB=ON  PLU=ON  L89 AND DOP#####
L91          65 SEA ABB=ON  PLU=ON  L48 OR (L51 OR L52 OR L53 OR L54 OR L55)
                OR (L57 OR L58 OR L59 OR L60) OR L63 OR L72 OR (L86 OR L87) OR
                L90
L92          26 SEA ABB=ON  PLU=ON  L91 AND L47
L93          27 SEA ABB=ON  PLU=ON  L48 OR (L51 OR L52 OR L53 OR L54 OR L55)
                OR (L57 OR L58 OR L59) OR L63 OR L86 OR L90
L94          30 SEA ABB=ON  PLU=ON  (L92 OR L93)
L95          29 SEA ABB=ON  PLU=ON  L94 NOT L43
                D ALL HITSTR 1-29
L96          19 SEA ABB=ON  PLU=ON  L85 NOT L94
                D ALL HITSTR 1-19
L97          49 SEA ABB=ON  PLU=ON  L85 OR L94
L98         738 SEA ABB=ON  PLU=ON  L38 AND L39
L99          51 SEA ABB=ON  PLU=ON  L47 AND L98
L100         11 SEA ABB=ON  PLU=ON  L99 NOT L97
                D ALL HITSTR 1-11
L101      14469 SEA ABB=ON  PLU=ON  (L37 OR L42 OR L83)
L102       3734 SEA ABB=ON  PLU=ON  L101 AND ((L73 OR L74 OR L75 OR L76) OR
                SPIN OR SPINN#####)
L103         43 SEA ABB=ON  PLU=ON  L47 AND L102
L104       3650 SEA ABB=ON  PLU=ON  L102 AND L83
L105          4 SEA ABB=ON  PLU=ON  L104 AND L38
L106         12 SEA ABB=ON  PLU=ON  L104 AND L39
L107        169 SEA ABB=ON  PLU=ON  L104 AND DOP######
L108          5 SEA ABB=ON  PLU=ON  L104 AND (CVD OR PECVD OR LPCVD OR (VAPOR
                OR VAPOUR)(3A)(DEP OR DEPD OR DEPN OR DEPOS#######))
L109        172 SEA ABB=ON  PLU=ON  L104 AND INDEPENDENT###
L110         11 SEA ABB=ON  PLU=ON  L75 AND L76 AND L109
L111         18 SEA ABB=ON  PLU=ON  (CONVERT#### OR CONVERSION) AND L109
L112         60 SEA ABB=ON  PLU=ON  L100 OR L97
L113          6 SEA ABB=ON  PLU=ON  L107 AND L109
L114        168 SEA ABB=ON  PLU=ON  (L91 OR L92 OR L93 OR L94 OR L95 OR L96 OR
                L97) OR (L99 OR L100) OR L103 OR (L105 OR L106) OR L108 OR
                (L110 OR L111) OR L113
L115        108 SEA ABB=ON  PLU=ON  L114 NOT L112
L116         38 SEA ABB=ON  PLU=ON  L115 AND L47
                D ALL HITSTR TOT
L117          0 SEA ABB=ON  PLU=ON  L116 AND ((L38 OR L39) OR L71)
L118          1 SEA ABB=ON  PLU=ON  L116 AND L37
                D ALL
```

FYI only

This 6310360 is already in case file

Sheet 1 of 2

L95 ANSWER 23 OF 29 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2001:78676 HCAPLUS
DN 134:155056
TI Intersystem crossing agents for efficient utilization of excitons in organic light emitting devices
IN Forrest, Stephen R.; Thompson, Mark E.; Baldo, Marc A.
PA The Trustees of Princeton University, USA; The University of Southern California
SO PCT Int. Appl., 46 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM **H01L035-24**
ICS H01L027-15; H01L033-00; H01J001-62
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 74, 76

FAN.CNT 1

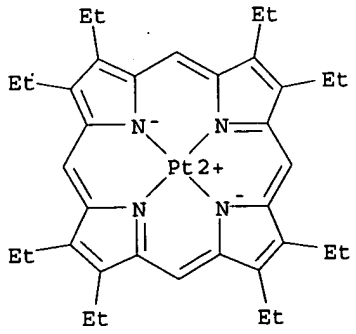
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001008230	A1	20010201	WO 2000-US19738	20000720
	US 6310360	B1	20011030	US 1999-358731	19990721
	EP 1204994	A1	20020515	EP 2000-947554	20000720
	JP 2003520391	T2	20030702	JP 2001-512642	20000720
	US 2002008233	A1	20020124	US 2001-915130	20010725
	US 6515298	B2	20030204		
PRAI	US 1999-358731	A	19990721		
	WO 2000-US19738	W	20000720		

AB Org. light-emitting devices comprising a heterostructure active structure including an emitting layer formed from a host material **doped** with an **electroluminescent** emissive mol. are described in which the heterostructure comprises an intersystem crossing mol. selected so that the efficiency of the emission is enhanced by the use of the intersystem crossing mol.

ST org light emitting device intrasystem crossing sensitizer

IT **31248-39-2**, Platinum octaethyl porphyrin
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(org. light-emitting devices using intersystem crossing agents for efficient utilization of excitons)

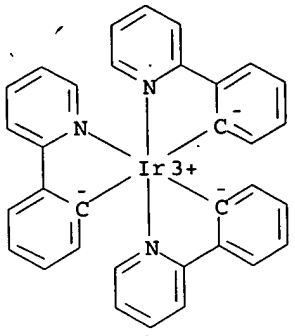
RN 31248-39-2 HCAPLUS
CN Platinum, [2,3,7,8,12,13,17,18-octaethyl-21H,23H-porphinato(2-)-.kappa.N21,.kappa.N22,.kappa.N23,.kappa.N24]-, (SP-4-1)- (9CI) (CA INDEX NAME)



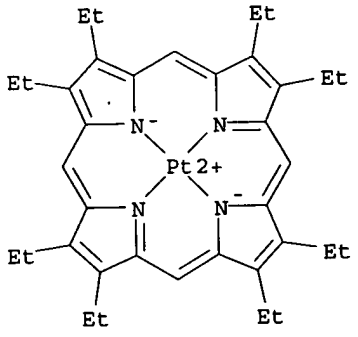
IT **94928-86-6**, Tris(2-phenylpyridine)iridium
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(sensitizer; org. light-emitting devices using intersystem crossing agents for efficient utilization of excitons)

RN 94928-86-6 HCAPLUS

CN Iridium, tris[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-22)- (9CI)
(CA INDEX NAME)

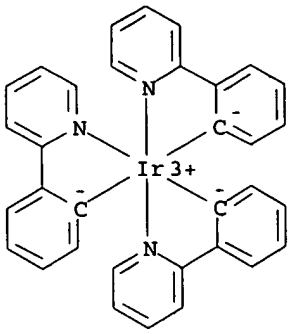


L95 ANSWER 24 OF 29 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2001:6947 HCAPLUS
DN 134:185686
TI Material transport regimes and mechanisms for growth of molecular organic thin films using low-pressure organic vapor phase deposition
AU Shtein, Max; Gossenberger, Herman F.; Benziger, Jay B.; Forrest, Stephen R.
CS Center for Photonics and Optoelectronic Materials and Department of Chemical Engineering, Princeton University, Princeton, NJ, 08544, USA
SO Journal of Applied Physics (2001), 89(2), 1470-1476
CODEN: JAPIAU; ISSN: 0021-8979
PB American Institute of Physics
DT Journal
LA English
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 74, 75, 76
AB The authors det. the phys. mechanisms controlling the growth of amorphous org. thin films by the process of low-pressure org. vapor phase deposition (LP-OVPD). In LP-OVPD, multiple host and **dopant** mol. sources are introduced into a hot wall reactor via several injection barrels using an inert carrier gas, allowing for controlled film growth rates exceeding 10 .ANG./s. The temp. and carrier flow rate for each source can be independently regulated, allowing considerable control over **dopant** concn., deposition rate, and thickness uniformity of the thin films. The rate of film deposition is limited either by the rate of condensation on the substrate or by the rate of supply from the source. The source-limited regime can be further classified into equil. or kinetically limited evapn., coupled to convection- or diffusion-limited deposition. Models are developed to relate the rate of film growth to source and substrate temp., and carrier gas flow rate. These models characterize and predict the performance of the LP-OVPD system used to grow high performance org. light emitting devices.
IT **31248-39-2**, Platinum octaethylporphyrin **94928-86-6**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(material transport regimes and mechanisms for growth of mol. org. thin films using low-pressure org. vapor phase deposition)
RN 31248-39-2 HCAPLUS
CN Platinum, [2,3,7,8,12,13,17,18-octaethyl-21H,23H-porphinato(2-)-.kappa.N21,.kappa.N22,.kappa.N23,.kappa.N24]-, (SP-4-1)- (9CI) (CA INDEX NAME)



RN 94928-86-6 HCAPLUS
CN Iridium, tris[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-22)- (9CI) (CA INDEX NAME)

Sheet 1 of 2


N
C
N
Ir 3+
C
C
N

L96 ANSWER 8 OF 19 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2002:830080 HCAPLUS
DN 137:330889
TI MOCVD, its apparatus, electroluminescent devices manufactured thereby, and displays therewith
IN Yamazaki, Shunpei; Seo, Satoshi; Shibata, Noriko
PA Semiconductor Energy Laboratory Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 31 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C23C014-24
ICS C23C014-12; H05B033-10; H05B033-14
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 74, 75, 76

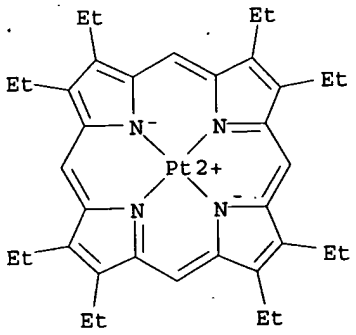
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002317262	A2	20021031	JP 2002-23528	20020131
	US 2003010288	A1	20030116	US 2002-72310	20020205
	CN 1369900	A	20020918	CN 2002-104561	20020208
PRAI	JP 2001-32997	A	20010208		

AB Low-threshold and long-life LED (electroluminescent devices/displays) are manufd. by MOCVD in app. having vacuum chambers that possess electrolytically polished inner surfaces (to av. roughness .ltoreq.5 nm), two dissimilar exhausters, and two dissimilar sources. The sources are evapd. simultaneously while being varied continuously in concn. to form multilayers of dissimilar (metal)org. films having mixing regions. LED manufd. as above show low energy potential in the (metal)org. multilayers, thereby exhibiting high carrier injection efficiency.

IT **31248-39-2**, 2,3,7,8,12,13,17,18-Octaethyl-21H, 23H-porphyrinplatinum **94928-86-6**, Tris(2-phenylpyridine)iridium
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(emitting layers; MOCVD app. for long-life and low-threshold color LED having metalorg. multilayers with mixing regions)

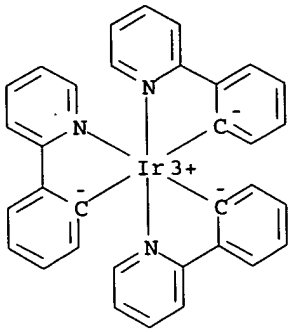
RN 31248-39-2 HCAPLUS
CN Platinum, [2,3,7,8,12,13,17,18-octaethyl-21H,23H-porphinato(2-)-.kappa.N21,.kappa.N22,.kappa.N23,.kappa.N24]-, (SP-4-1)- (9CI) (CA INDEX NAME)



RN 94928-86-6 HCAPLUS
CN Iridium, tris[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-22)- (9CI) (CA INDEX NAME)

2/8/01 priority

Sheet 1 of 2


N
C
N
Ir 3+
C
C
N

1 of 2

L95 ANSWER 12 OF 29 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2002:503507 HCAPLUS
DN 137:70361
TI Organic **electroluminescent** device and display apparatus
IN Naito, Katsuyuki
PA Kabushiki Kaisha Toshiba, Japan
SO Eur. Pat. Appl., 17 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM **H01L051-20**
ICS H01L051-30; H01L027-00
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 74, 76

FAN.CNT 1

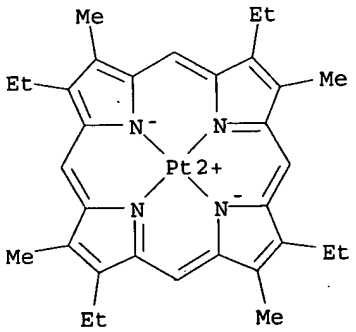
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 1220341	A2	20020703	EP 2001-310877	20011224
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
US 2002106531	A1	20020808	US 2001-25919	20011226
JP 2002280183	A2	20020927	JP 2001-398390	20011227
PRAI JP 2000-402663	A	20001228		

2000 priority

AB Org. **electroluminescent** devices comprising an anode; a cathode; and a polymer luminescent layer disposed between the anode and the cathode, and comprising a host mol. and a luminescent dye mol. are described in which characterized in that the host mol. is formed of a .pi.-electron conjugated polymer having carbon-fluorine bonds and the luminescent dye mol. is capable of receiving energy from the host mol. both in an excited singlet state and in an excited triplet state. Preferably, the luminescent dye mol. is selected from the group consisting of a transition metal complex and a linear .pi.-electron conjugated mol. Display app. employing the devices is also described.

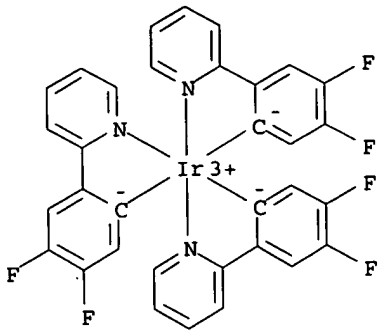
IT **14055-22-2 264906-16-3**
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(org. **electroluminescent** devices with **doped** fluoropolymer emitting layers and display app.)

RN 14055-22-2 HCAPLUS
CN Platinum, [2,7,12,17-tetraethyl-3,8,13,18-tetramethyl-21H,23H-porphinato(2-)-.kappa.N21,.kappa.N22,.kappa.N23,.kappa.N24]-, (SP-4-1)- (9CI) (CA INDEX NAME)



not the Ir + Pt cpds you're seeking.

RN 264906-16-3 HCAPLUS
CN Iridium, tris[4,5-difluoro-2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-22)- (9CI) (CA INDEX NAME)



2 of 2

1 of 5

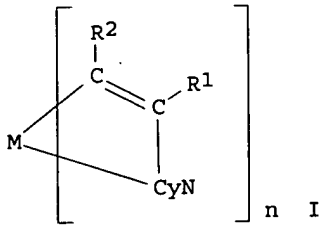
L95 ANSWER 10 OF 29 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2002:575480 HCAPLUS
DN 137:147551
TI Metal coordination compounds and **electroluminescent** devices and displays employing the compounds
IN Takiguchi, Takao; Okada, Shinjiro; Tsuboyama, Akira; Noguchi, Koji; Moriyama, Takashi; Kamatani, Jun; Furugori, Manabu
PA Japan
SO U.S. Pat. Appl. Publ., 15 pp.
CODEN: USXXCO
DT Patent
LA English
IC ICM H01L021-00
ICS **H01L035-24**; H01L051-00; H01L027-15; H01L031-12; H01L033-00
NCL 257040000
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 74, 76, 78

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002100906	A1	20020801	US 2001-995609	20011129
	JP 2002234894	A2	20020823	JP 2001-344549	20011109
PRAI	JP 2000-362151	A	20001129		
	JP 2001-344549	A	20011109		

2000 priority

OS MARPAT 137:147551
GI



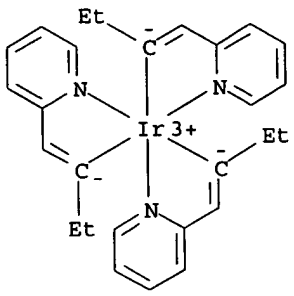
I

AB Metal coordination compds. represented by I are described in which M=Ir, Pt, Rh or Pd; n=2 or 3; R1 and R2 independently denote a linear or branched alkyl group with 1-20 C atoms capable of including 1 or .gtoreq.2 non-neighboring methylene groups which can be replaced with -O-, -S-, -CO-, -CO-O-, -O-CO-, -CH:CH- or -C.tplbond.C- and capable of including H which can be replaced with F; and CyN denotes a cyclic group contg. N connected to M and capable of having a substituent selected from the group consisting of halogen atom; nitro group; Ph group; trialkylsilyl group having 1-8 C atoms; and a linear or branched alkyl group having 1-20 C atoms capable of including 1 or .gtoreq.2 non-neighboring methylene groups which can be replaced with -O-, -S-, -CO-, -CO-O-, -O-CO-, -CH:CH- or -C.tplbond.C- and capable of including H which can be replaced with F. **Electroluminescent** devices and optical imaging displays employing the metal coordination compds. as the **electroluminescent** layer are also described.

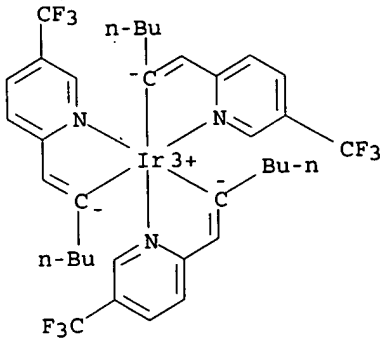
IT **444608-90-6 444608-91-7 444608-92-8**
444608-93-9 444608-94-0 444608-95-1
444608-96-2 444608-97-3
RL: DEV (Device component use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process); USES (Uses)
(luminescent layer of CBP **doped** with; phosphorescent metal coordination compds., **electroluminescent** devices and displays employing compds.)

RN 444608-90-6 HCAPLUS
CN Iridium, tris[1-[(2-pyridinyl-.kappa.N)methylene]propyl-.kappa.C]- (9CI) (CA INDEX NAME)

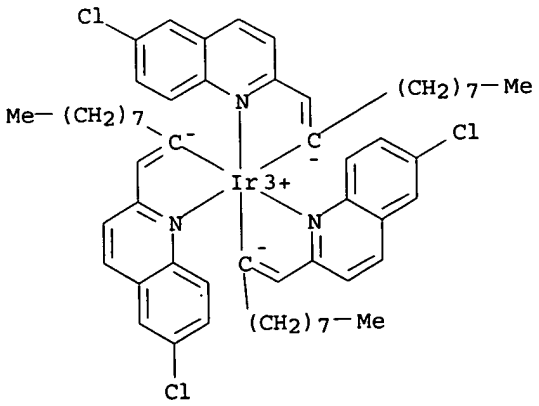
2 of 5



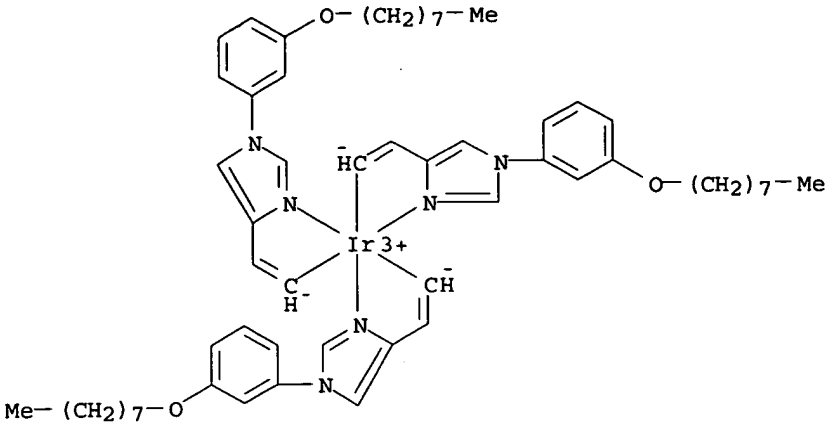
RN 444608-91-7 HCAPLUS
CN Iridium, tris[1-[[5-(trifluoromethyl)-2-pyridinyl-.kappa.N]methylene]pentyl-.kappa.C]- (9CI) (CA INDEX NAME)



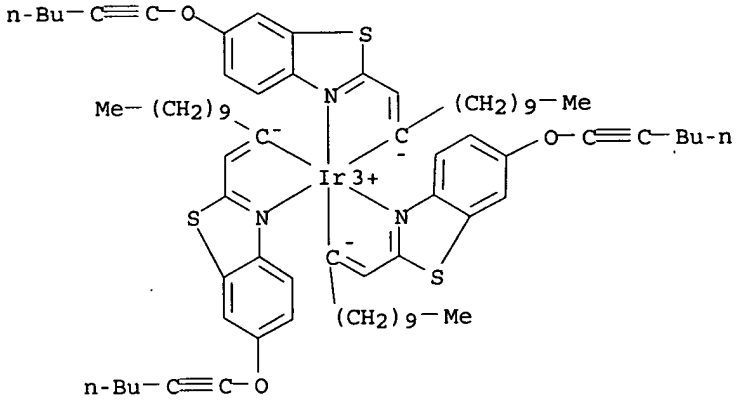
RN 444608-92-8 HCAPLUS
CN Iridium, tris[1-[(6-chloro-2-quinolinyl-.kappa.N)methylene]nonyl-.kappa.C]- (9CI) (CA INDEX NAME)



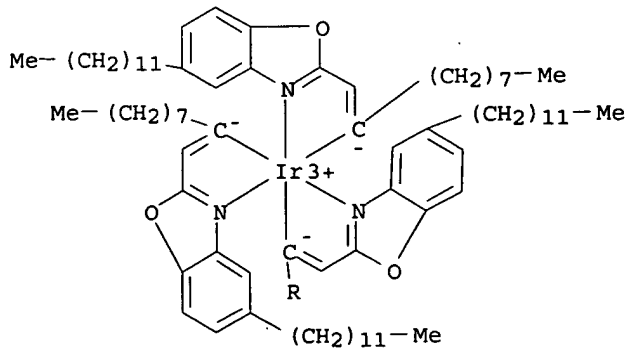
RN 444608-93-9 HCAPLUS
CN Iridium, tris[2-[1-[3-(octyloxy)phenyl]-1H-imidazol-4-yl-.kappa.N3]ethenyl-.kappa.C]- (9CI) (CA INDEX NAME)

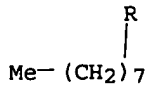


RN 444608-94-0 HCAPLUS
CN Iridium, tris[1-[[6-(1-hexynyloxy)-2-benzothiazolyl-.kappa.N3]methylene]undecyl-.kappa.C]- (9CI) (CA INDEX NAME)



RN 444608-95-1 HCAPLUS
CN Iridium, tris[1-[(5-dodecyl-2-benzoxazolyl-.kappa.N3)methylene]nonyl-.kappa.C]- (9CI) (CA INDEX NAME)





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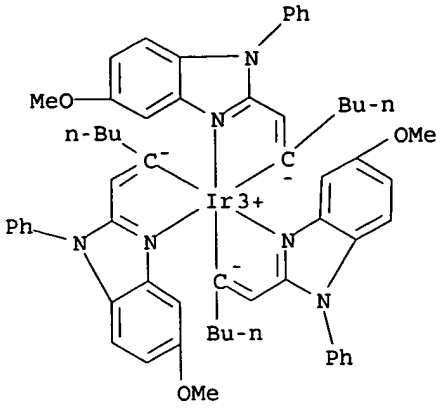
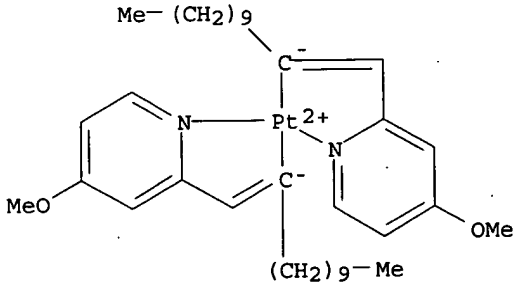
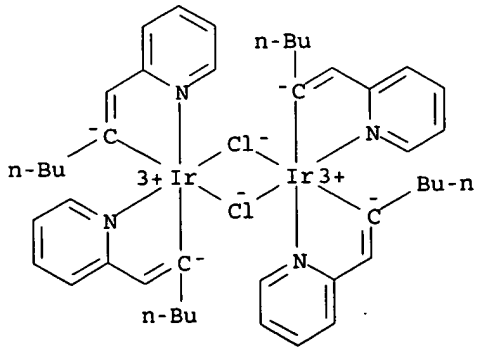
RN 444608-96-2 HCAPLUS
CN Iridium, tris[1-[[5-methoxy-1-phenyl-1H-benzimidazol-2-yl-.kappa.N3]methylene]pentyl-.kappa.C]- (9CI) (CA INDEX NAME)



RN 444608-97-3 HCAPLUS
CN Platinum, bis[1-[(4-methoxy-2-pyridinyl-.kappa.N)methylene]undecyl-.kappa.C]- (9CI) (CA INDEX NAME)

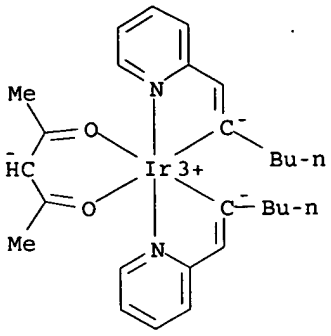


IT **444608-86-0P 444608-87-1P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(phosphorescent metal coordination compds. prepd. using)
RN 444608-86-0 HCAPLUS
CN Iridium, di-.mu.-chlorotetrakis[1-[(2-pyridinyl-.kappa.N)methylene]pentyl-.kappa.C]di- (9CI) (CA INDEX NAME)



RN 444608-87-1 HCAPLUS

CN Iridium, (2,4-pentanedionato-.kappa.O,.kappa.O')bis[1-[(2-pyridinyl-.kappa.N)methylene]pentyl-.kappa.C]- (9CI) (CA INDEX NAME)



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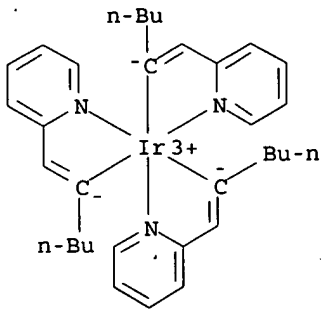
IT **444608-88-2P**
RL: DEV (Device component use); MOA (Modifier or additive use); PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(phosphorescent metal coordination compds., **electroluminescent** devices and displays employing compds.)
RN 444608-88-2 HCAPLUS
CN Iridium, tris[1-[(2-pyridinyl-.kappa.N)methylene]pentyl-.kappa.C]- (9CI) (CA INDEX NAME)



L95 ANSWER 13 OF 29 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2002:466499 HCAPLUS
DN 137:39172
TI Highly stable and efficient OLEDs with a phosphorescent-**doped** mixed layer architecture
IN Kwong, Raymond C.; Hack, Michael G.; Zhou, Theodore; Brown, Julia J.; Ngo, Tan D.
PA USA
SO U.S. Pat. Appl. Publ., 12 pp.
CODEN: USXXCO
DT Patent
LA English
IC ICM H01J063-04
ICS H01J001-62
NCL 313504000
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 74, 76

1 of 2

FAN.CNT 1

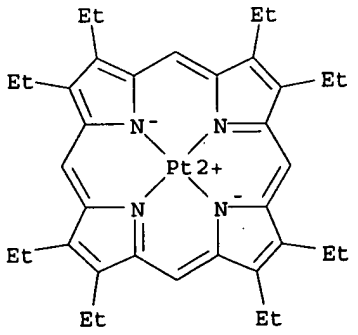
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002074935	A1	20020620	US 2000-738429	20001215
	WO 2002047457	A2	20020620	WO 2001-US47169	20011210
	WO 2002047457	A3	20030724		
	AU 2002030675	A5	20020624	AU 2002-30675	20011210
PRAI	US 2000-738429	A	20001215		
	WO 2001-US47169	W	20011210		

2000 priority

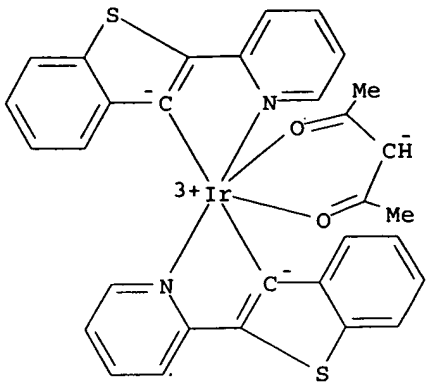
AB Org. light-emitting devices are described which comprise a substrate; an anode layer over the substrate; a hole injecting layer over the anode layer; a mixed layer over the hole injecting layer, the mixed layer functioning as an emission layer and comprising an org. small mol. hole transporting material, an org. small mol. electron transporting material, and a phosphorescent **dopant**; and a cathode layer over the mixed layer. An electron transporting layer may be present between the mixed layer and the cathode layer and a hole transporting layer may be present between the hole injecting layer and the mixed layer. Multicolor displays employing the devices as pixels are also described.

IT **31248-39-2 343978-79-0**
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(org. light-emitting devices with a phosphorescent-**doped** mixed layer architecture)

RN 31248-39-2 HCAPLUS
CN Platinum, [2,3,7,8,12,13,17,18-octaethyl-21H,23H-porphinato(2-)-.kappa.N21,.kappa.N22,.kappa.N23,.kappa.N24]-, (SP-4-1)- (9CI) (CA INDEX NAME)

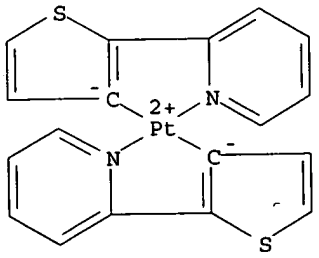


RN 343978-79-0 HCAPLUS
CN Iridium, (2,4-pentanedionato-.kappa.O,.kappa.O')bis[2-(2-pyridinyl-.kappa.N)benzo[b]thien-3-yl-.kappa.C]-, (OC-6-33)- (9CI) (CA INDEX NAME)



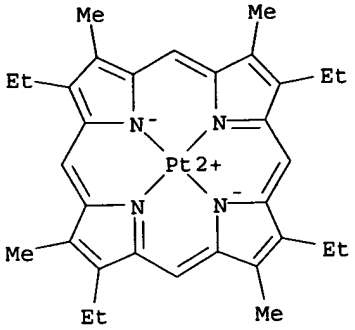
2 of 2

L95 ANSWER 16 OF 29 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2001:536051 HCAPLUS
DN 136:158400
TI Molecularly **doped** polymer light emitting diodes utilizing phosphorescent Pt(II) and Ir(III) **dopants**
AU Lamansky, Sergey; Kwong, Raymond C.; Nugent, Matthew; Djurovich, Peter I.; Thompson, Mark E.
CS Department of Chemistry, University of Southern California, Los Angeles, CA, 90089, USA
SO Organic Electronics (2001), 2(1), 53-62
CODEN: OERLAU; ISSN: 1566-1199
PB Elsevier Science B.V.
DT Journal
LA English
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 37, 76
AB Mol. phosphorescent dyes were combined with polymers to evaluate the systems for use in org. light emitting diodes (OLED). The polymer is poly(N-vinylcarbazole) (PVK) and the dyes are cis-bis[2-(2-thienyl)pyridine-N,C3] platinum(II) (Pt(thpy)2) and platinum(II) 2,8,12,17-tetraethyl-3,7,13,18-tetramethylporphyrin (PtOX), and an Ir(III) compd., fac-tris[2-(4',5'-difluorophenyl)pyridine-C'2,N] iridium(III) (FIrppy). The max. external quantum efficiency of phosphorescent structures was 0.6% for the Pt dyes and .apprxeq.1.8% for FIrppy. An overall increase in phosphorescence efficiency vs. similar structures based on fluorescence is attributed to the fact that phosphorescent dyes allow both singlet and triplet excitons to be involved in emission. The **dopant** concn. and org. layer thickness influence the performance of the diode structure. Introduction of an electron injecting layer of tris(8-hydroxyquinoline) aluminum(III) causes an increase of quantum efficiency of up to 1.8-2.8%. The second order quenching process in the OLEDs, which is prevalent at high c.d., is most likely not due to T-T annihilation of excitons trapped at **dopant** sites, rather, it is due to T-T annihilation in the PVK matrix or trapped charge-triplet annihilation.
IT **100012-12-2 254104-18-2**
RL: DEV (Device component use); MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(optical properties and phosphorescence efficiency of poly(N-vinylcarbazole)/Pt(II) and Ir(III) **dopant** emitters in OLEDs)
RN 100012-12-2 HCAPLUS
CN Platinum, bis[2-(2-pyridinyl-.kappa.N)-3-thienyl-.kappa.C]-, (SP-4-2)- (9CI) (CA INDEX NAME)



RN 254104-18-2 HCAPLUS
CN Platinum, [2,7,12,18-tetraethyl-3,8,13,17-tetramethyl-21H,23H-porphinato(2-)-.kappa.N21,.kappa.N22,.kappa.N23,.kappa.N24]-, (SP-4-2)- (9CI) (CA INDEX NAME)

1 of 2



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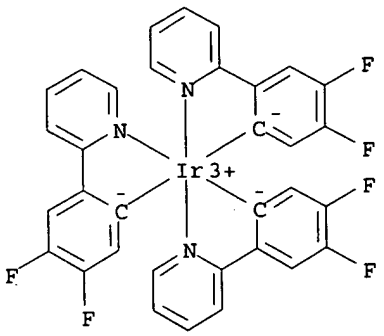
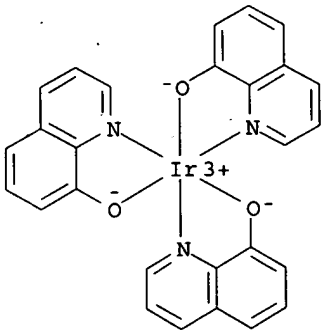
IT **264906-16-3P**, fac-Tris[2-(4',5'-difluorophenyl)pyridine-C'2,N] iridium(III)
RL: DEV (Device component use); MOA (Modifier or additive use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(optical properties and phosphorescence efficiency of poly(N-vinylcarbazole)/Pt(II) and Ir(III) **dopant** emitters in OLEDs)
RN 264906-16-3 HCAPLUS
CN Iridium, tris[4,5-difluoro-2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-22)- (9CI) (CA INDEX NAME)



L95 ANSWER 25 OF 29 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2000:633850 HCAPLUS
DN 133:367389
TI Organic light-emitting devices based on phosphorescent hosts and dyes
AU Kwong, Raymond C.; Lamansky, Sergey; Thompson, Mark E.
CS Department of Chemistry, University of Southern California, Los Angeles, CA, 90089, USA
SO Advanced Materials (Weinheim, Germany) (2000), 12(15), 1134-1138
CODEN: ADVMEW; ISSN: 0935-9648
PB Wiley-VCH Verlag GmbH
DT Journal
LA English
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 41, 76
AB Phosphorescent dyes may lead to more efficient **electroluminescent** devices, since triplets should be formed in a 3-fold excess compared to singlets. Efficient devices are presented here that were constructed using phosphorescent dye-**doped** layers as both the electron transporting and emitting layer. Triplet energy transfer from the host Ir(ppy)3 (ppy = (2-pyridinyl)phenyl) to the red phosphorescent **dopant** Pt 2,8,12,17-tetraethyl-3,7,13,18-tetramethylporphyrin was obsd. directly.
IT **15671-12-2**, Tris(8-hydroxyquinolinato)iridium **25895-78-7** **94928-86-6**, Iridium, tris[2-(2-pyridinyl)phenyl-C,N]-, (OC-6-22)-
RL: DEV (Device component use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(org. LEDs contg. phosphorescent)
RN 15671-12-2 HCAPLUS
CN Iridium, tris(8-quinolinolato-.kappa.N1,.kappa.O8)- (9CI) (CA INDEX NAME)

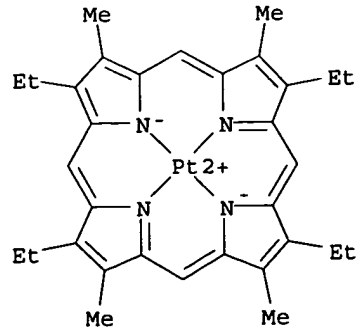
Sheet 1 of 2

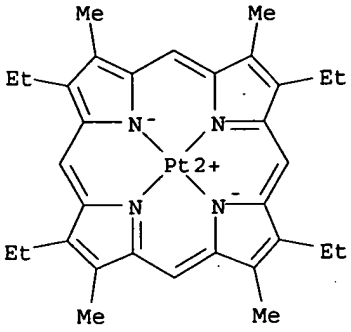
Iridium on sheet 2



Not the Pt complex you're seeking

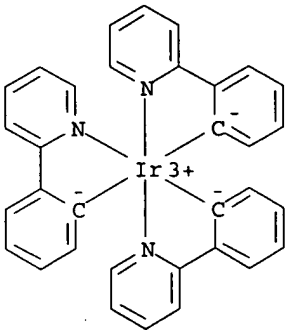
RN 25895-78-7 HCAPLUS
CN Platinum, [2,8,12,18-tetraethyl-3,7,13,17-tetramethyl-21H,23H-porphinato(2-)-.kappa.N21,.kappa.N22,.kappa.N23,.kappa.N24]-, (SP-4-1)- (9CI) (CA INDEX NAME)





RN 94928-86-6 HCAPLUS
CN Iridium, tris[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-22)- (9CI) (CA INDEX NAME)

IR(PY)3



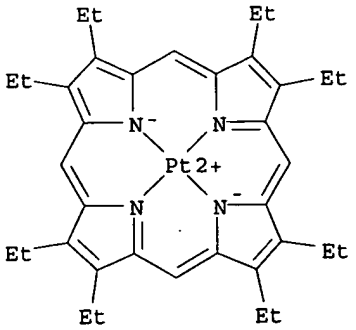
L95 ANSWER 17 OF 29 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2001:520472 HCAPLUS
DN 135:310157
TI Highly efficient polymer phosphorescent light emitting devices
AU Lee, C.-L.; Lee, K. B.; Kim, J.-J.
CS Department of Materials Science and Engineering, Kwangju Institute of Science and Technology, Kwangju, Buk-Gu, 500-712, S. Korea
SO Materials Science & Engineering, B: Solid-State Materials for Advanced Technology (2001), B85(2-3), 228-231
CODEN: MSBTEK; ISSN: 0921-5107
PB Elsevier Science S.A.
DT Journal
LA English
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 38, 76

1 of 2

AB The authors fabricated two kinds of phosphorescent polymer light emitting devices using two different phosphorescent emitters **doped** in a host polymer poly (vinylcarbazole) (PVK). Octaethylporphine platinum(II) (PtOEP) and tris(2-phenylpyridine) iridium [Ir(ppy)3] were used as the guest emitters in the devices, resp. The **doping** concns. of the PtOEP and [Ir(ppy)3] were 6 and 8%, resp. The emission spectra of the devices exhibited no emission from PVK, indicating that the energy transfer from PVK to guest mols. is efficient. The max. quantum efficiency was 0.6 and 1.9% at low current for PtOEP and [Ir(ppy)3] **doped** devices, resp. The efficiency decreased as the current increased for both devices. However, the decreasing rate was slower for the [Ir(ppy)3] **doped** device, which may result from the shorter triplet exciton life time of [Ir(ppy)3] than that of PtOEP. The devices showed max. brightness of 240 and 2500 cd m-2 for the PtOEP and [Ir(ppy)3] **doped** devices, resp.

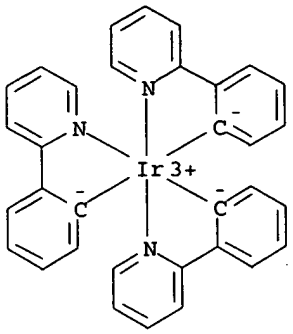
IT **31248-39-2**, Platinum(II) octaethylporphyrin **94928-86-6**, Tris(2-phenylpyridine) iridium
RL: DEV (Device component use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(highly efficient polymer phosphorescent light emitting devices utilizing triplet-triplet energy transfer between host polymer and **doped** phosphorescent dye)

RN 31248-39-2 HCAPLUS
CN Platinum, [2,3,7,8,12,13,17,18-octaethyl-21H,23H-porphinato(2-).kappa.N21,.kappa.N22,.kappa.N23,.kappa.N24]-, (SP-4-1)- (9CI) (CA INDEX NAME)



Both are guests

RN 94928-86-6 HCAPLUS
CN Iridium, tris[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-22)- (9CI) (CA INDEX NAME)

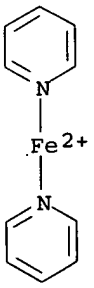


2 of 2

95 ANSWER 18 OF 29 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2001:484241 HCAPLUS
DN 135:235365
TI Cooperative Spin Crossover Behavior in Cyanide-Bridged Fe(II)-M(II) Bimetallic 3D Hofmann-like Networks (M = Ni, Pd, and Pt)
AU Niel, Virginie; Martinez-Agudo, Jose Maria; Munoz, M. Carmen; Gaspar, Ana Belen; Real, Jose Antonio
CS Departament de Quimica Inorganica/Institut de Ciencia Molecular, Universitat de Valencia, Burjassot Valencia, E-46100, Spain
SO Inorganic Chemistry (2001), 40(16), 3838-3839
CODEN: INOCAJ; ISSN: 0020-1669
PB American Chemical Society
DT Journal
LA English
CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 77
AB The three-dimensional polymeric compds. [Fe(pz)M(CN)4].cntdot.nH2O (pz = pyrazine; M = Ni, Pd, and Pt) were prepd. and characterized. They undergo strong cooperative spin transitions, large hysteresis loops, and dramatic color changes upon **spin conversion**. The two-dimensional homologues [Fe(py)2M(CN)4] also were prepd. and characterized. In the latter case cooperativity is smaller than in the tridimensional derivs., and consequently narrower hysteresis loops were obsd.
IT **359404-75-4P 359404-79-8P**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(prepn. and spin crossover in 3-dimensional Hofmann-like networks)
RN 359404-75-4 HCAPLUS
CN Iron(2+), bis(pyridine)-, (SP-4-1)-tetrakis(cyano-.kappa.C)platinate(2-) (1:1) (9CI) (CA INDEX NAME)

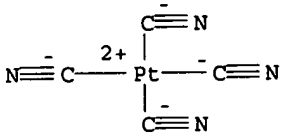
CM 1

CRN 73871-24-6
CMF C10 H10 Fe N2
CCI CCS



CM 2

CRN 15004-88-3
CMF C4 N4 Pt
CCI CCS

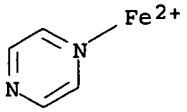


1 of 2

RN 359404-79-8 HCAPLUS
CN Iron(2+), (pyrazine-.kappa.N1)-, (SP-4-1)-tetrakis(cyano-.kappa.C)platinate(2-) (1:1) (9CI) (CA INDEX NAME)

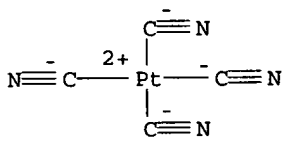
CM 1

CRN 359404-76-5
CMF C4 H4 Fe N2
CCI CCS

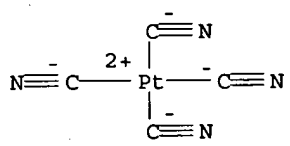


CM 2

CRN 15004-88-3
CMF C4 N4 Pt
CCI CCS



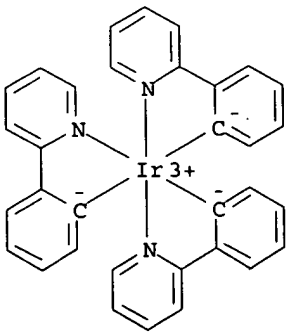
IT **562-76-5**, Dipotassium tetracyanoplatinate(2-)
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant for prepn. of iron pyrazine/pyridine Hofmann-like networks with tetracyanonickelate/palladate/platinate)
RN 562-76-5 HCAPLUS
CN Platinate(2-), tetrakis(cyano-.kappa.C)-, dipotassium, (SP-4-1)- (9CI) (CA INDEX NAME)



2 K^+

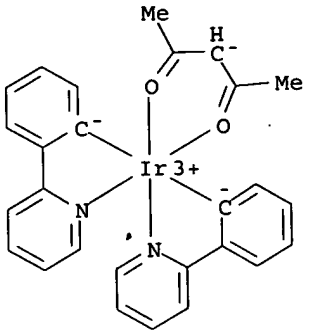
2 of 2

L95 ANSWER 19 OF 29 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2001:400126 HCAPLUS
DN 135:187081
TI High-efficiency organic electrophosphorescent devices
AU Thompson, Mark E.; Zhou, Theodore X.; Lamansky, Sergey; Djurovich, Peter; Murphy, Drew; Abdel-Razaq, Feras; Forrest, Stephen R.; Baldo, Marc A.; Burrows, Paul E.; Adachi, Chihaya; Michalski, Lech; Rajan, Kamala; Brown, Julie J.
CS Department of Chemistry, University of Southern California, Los Angeles, CA, 90089, USA
SO Proceedings of SPIE-The International Society for Optical Engineering (2001), 4105(Organic Light-Emitting Materials and Devices IV), 119-124
CODEN: PSISDG; ISSN: 0277-786X
PB SPIE-The International Society for Optical Engineering
DT Journal
LA English
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 22
AB Satd. red, orange, yellow and green OLEDs were fabricated using phosphorescent **dopants**. Using phosphorescence based emitters the inherent 25% upper limit on emission obsd. for traditional fluorescence based systems was eliminated. The quantum efficiencies of these devices are quite good, with measured external efficiencies >15% and >40 lum/W (green) in the best devices. The phosphorescent **dopants** in these devices are heavy metal contg. mols. (i.e. Pt, and Ir), prepd. as both metalloporphyrins and organometallic complexes. The high level of spin orbit coupling in these metal complexes gives efficient emission from triplet states. In addn. to emission from the heavy metal **dopant**, it is possible to transfer the exciton energy to a fluorescent dye, by Forster energy transfer. The heavy metal **dopant** in this case acts as a sensitizer, using both singlet and triplet excitons to efficiently pump a fluorescent dye. The important parameters in designing electrophosphorescent OLEDs as well as their strengths and limitations are discussed. Accelerated aging studies, on packaged devices, showed that phosphorescence based OLEDs can have very long device lifetimes.
IT **94928-86-6**, Tris(2-phenylpyridine)iridium **337526-85-9** **337526-87-1** **337526-88-2** **343978-78-9** **343978-79-0** **343978-94-9**
RL: DEV (Device component use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(high-efficiency org. electrophosphorescent devices contg.)
RN 94928-86-6 HCAPLUS
CN Iridium, tris[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-22)- (9CI) (CA INDEX NAME)

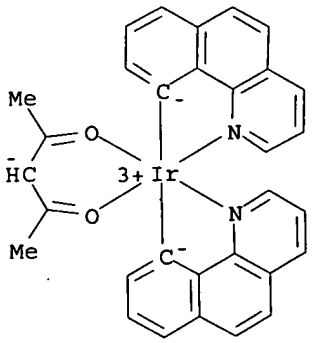


RN 337526-85-9 HCAPLUS
CN Iridium, (2,4-pentanedionato-.kappa.O,.kappa.O')bis[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-33)- (9CI) (CA INDEX NAME)

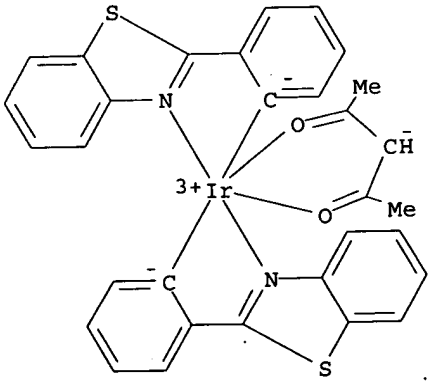
sheet 1 of 4



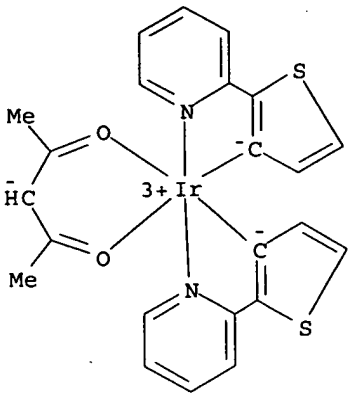
RN 337526-87-1 HCAPLUS
CN Iridium, bis(benzo[h]quinolin-10-yl-.kappa.C,.kappa.N)(2,4-pentanedionato-.kappa.O,.kappa.O')-, (OC-6-33)- (9CI) (CA INDEX NAME)



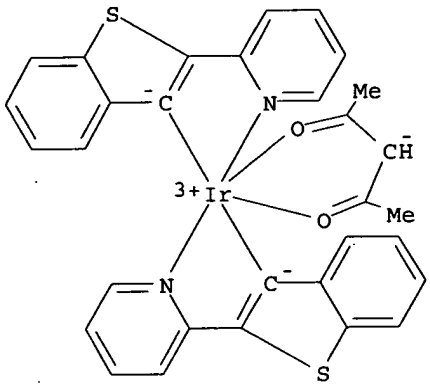
RN 337526-88-2 HCAPLUS
CN Iridium, bis[2-(2-benzothiazolyl-.kappa.N3)phenyl-.kappa.C](2,4-pentanedionato-.kappa.O,.kappa.O')-, (OC-6-33)- (9CI) (CA INDEX NAME)



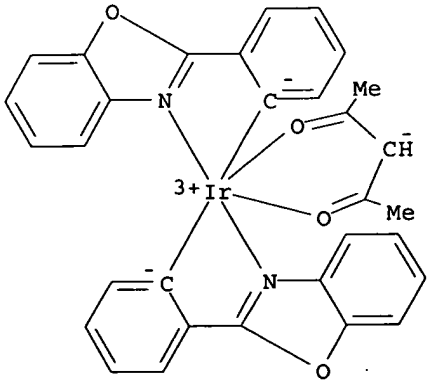
RN 343978-78-9 HCAPLUS
CN Iridium, (2,4-pentanedionato-.kappa.O,.kappa.O')bis[2-(2-pyridinyl-.kappa.N)-3-thienyl-.kappa.C]-, (OC-6-33)- (9CI) (CA INDEX NAME)



RN 343978-79-0 HCAPLUS
CN Iridium, (2,4-pentanedionato-.kappa.O,.kappa.O')bis[2-(2-pyridinyl-.kappa.N)benzo[b]thien-3-yl-.kappa.C]-, (OC-6-33)- (9CI) (CA INDEX NAME)

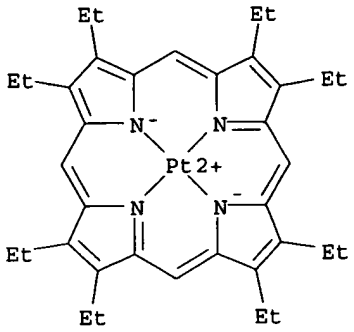


RN 343978-94-9 HCAPLUS
CN Iridium, bis[2-(2-benzoxazolyl-.kappa.N3)phenyl-.kappa.C](2,4-pentanedionato-.kappa.O,.kappa.O')-, (OC-6-33)- (9CI) (CA INDEX NAME)



IT **31248-39-2**, 2,3,7,8,12,13,17,18-Octaethyl-21H,23H-porphyrinplatinum
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(high-efficiency org. electrophosphorescent devices contg.)

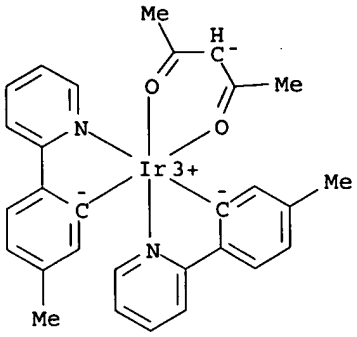
RN 31248-39-2 HCAPLUS
CN Platinum, [2,3,7,8,12,13,17,18-octaethyl-21H,23H-porphinato(2-)-.kappa.N21,.kappa.N22,.kappa.N23,.kappa.N24]-, (SP-4-1)- (9CI) (CA INDEX NAME)



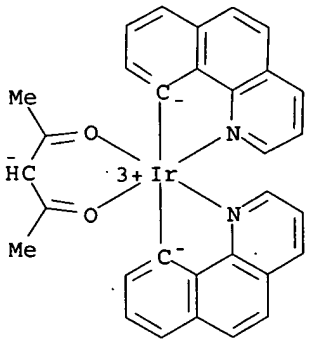
L95 ANSWER 20 OF 29 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2001:261004 HCAPLUS
DN 135:52988
TI Highly Phosphorescent Bis-Cyclometalated Iridium Complexes: Synthesis, Photophysical Characterization, and Use in Organic Light Emitting Diodes
AU Lamansky, Sergey; Djurovich, Peter; Murphy, Drew; Abdel-Razzaq, Feras; Lee, Hae-Eun; Adachi, Chihaya; Burrows, Paul E.; Forrest, Stephen R.; Thompson, Mark E.
CS Department of Chemistry, University of Southern California, Los Angeles, CA, 90089, USA
SO Journal of the American Chemical Society (2001), 123(18), 4304-4312
CODEN: JACSAT; ISSN: 0002-7863
PB American Chemical Society
DT Journal
LA English
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 29
AB The synthesis and photophys. study of a family of cyclometalated Ir(III) complexes are reported. The Ir complexes have 2 cyclometalated (C-N) ligands and a single monoanionic, bidentate ancillary ligand (LX), i.e., (C-N)2Ir(LX). The C-N ligands can be any of a wide variety of organometallic ligands. The LX ligands used for this study were all .beta.-diketonates, with the major emphasis placed on acetylacetonate (acac) complexes. The majority of the (C-N)2Ir(acac) complexes phosphoresce with high **quantum** efficiencies (soln. **quantum** yields, 0.1-0.6), and microsecond lifetimes (e.g., 1-14 .mu.s). The strongly allowed phosphorescence in these complexes is the result of significant **spin**-orbit coupling of the Ir center. The lowest energy (emissive) **excited state** in these (C-N)2Ir(acac) complexes is a mixt. of 3MLCT and 3(.pi.-.pi.*) states. By choosing the appropriate C-N ligand, (C-N)2Ir(acac) complexes can be prepd. which emit in any color from green to red. Simple, systematic changes in the C-N ligands, which lead to bathochromic shifts of the free ligands, lead to similar bathochromic shifts in the Ir complexes of the same ligands, consistent with (C-N)2Ir-centered emission. Three of the (C-N)2Ir(acac) complexes were used as dopants for org. light emitting diodes (OLEDs). The 3 Ir complexes, i.e., bis(2-phenylpyridinato-N,C2')iridium(acetylacetonate) [ppy2Ir(acac)], bis(2-Ph benzothiozolato-N,C2')iridium(acetylacetonate) [bt2Ir(acac)], and bis(2-(2'-benzothienyl)pyridinato-N,C3')iridium(acetylacetonate) [btp2Ir(acac)], were doped into the emissive region of multilayer, vapor-deposited OLEDs. The ppy2Ir(acac)-, bt2Ir(acac)-, and btp2Ir(acac)-based OLEDs give green, yellow, and red **electroluminescence**, resp., with very similar current-voltage characteristics. The OLEDs give high external **quantum** efficiencies, ranging from 6 to 12.3%, with the ppy2Ir(acac) giving the highest efficiency (12.3%, 38 lm/W, >50 Cd/A). The btp2Ir(acac)-based device gives satd. red emission with a **quantum** efficiency of 6.5% and a luminance efficiency of 2.2 lm/W. These (C-N)2Ir(acac)-doped OLEDs show some of the highest efficiencies reported for org. light emitting diodes. The high efficiencies result from efficient trapping and radiative relaxation of the singlet and triplet excitons formed in the **electroluminescent** process.
IT **337526-86-0P 337526-87-1P 337526-93-9P**
337526-95-1P 343978-78-9P 343978-92-7P
343978-94-9P 344796-05-0P 344796-06-1P
344796-07-2P 344796-08-3P 344796-09-4P
344796-10-7P 344796-11-8P 344796-12-9P
344796-13-0P 344796-14-1P 344796-15-2P
344796-16-3P 344796-17-4P 344796-18-5P
344796-19-6P 344796-20-9P 344796-21-0P
344796-22-1P 344796-23-2P 344796-24-3P
RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation)
(synthesis and photophys. characterization of highly phosphorescent bis-cyclometalated iridium complexes)
RN 337526-86-0 HCAPLUS

Sheet 1 of 13

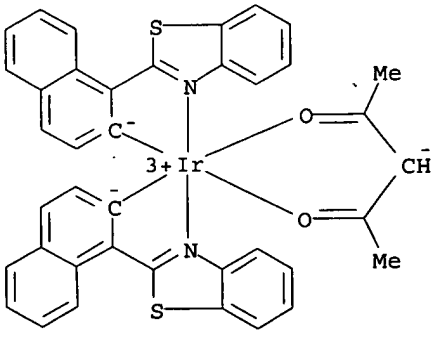
CN Iridium, bis[5-methyl-2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C](2,4-pentanedionato-.kappa.O,.kappa.O')-, (OC-6-33)- (9CI) (CA INDEX NAME)



RN 337526-87-1 HCAPLUS
CN Iridium, bis(benzo[h]quinolin-10-yl-.kappa.C,.kappa.N)(2,4-pentanedionato-.kappa.O,.kappa.O')-, (OC-6-33)- (9CI) (CA INDEX NAME)

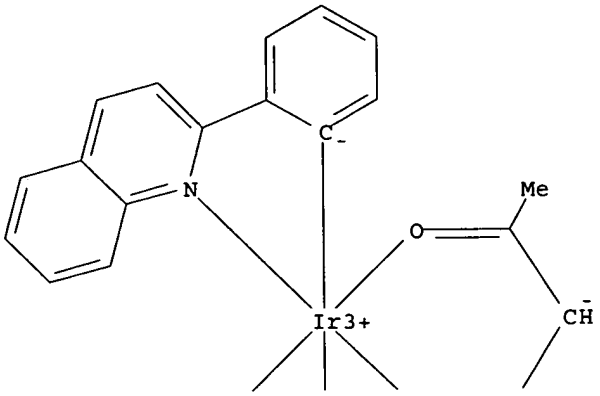


RN 337526-93-9 HCAPLUS
CN Iridium, bis[1-(2-benzothiazolyl-.kappa.N3)-2-naphthalenyl-.kappa.C](2,4-pentanedionato-.kappa.O,.kappa.O')-, (OC-6-33)- (9CI) (CA INDEX NAME)

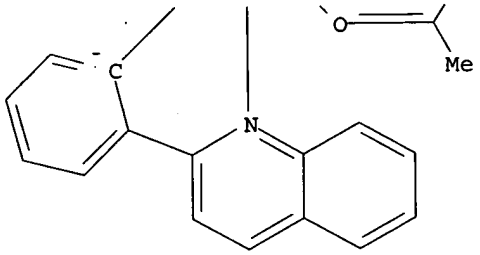


RN 337526-95-1 HCAPLUS
CN Iridium, (2,4-pentanedionato-.kappa.O,.kappa.O')bis[2-(2-quinolinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-33)- (9CI) (CA INDEX NAME)

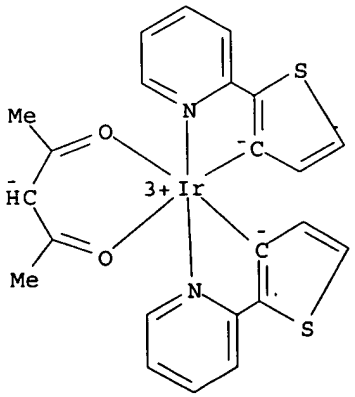
PAGE 1-A



PAGE 2-A

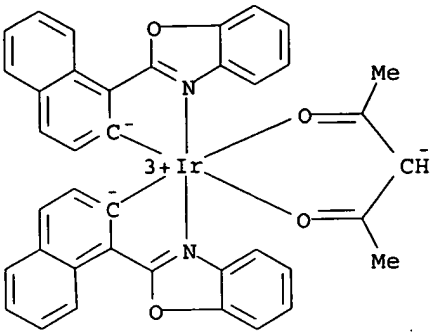


RN 343978-78-9 HCAPLUS
CN Iridium, (2,4-pentanedionato-.kappa.O,.kappa.O')bis[2-(2-pyridinyl-.kappa.N)-3-thienyl-.kappa.C]-, (OC-6-33)- (9CI) (CA INDEX NAME)

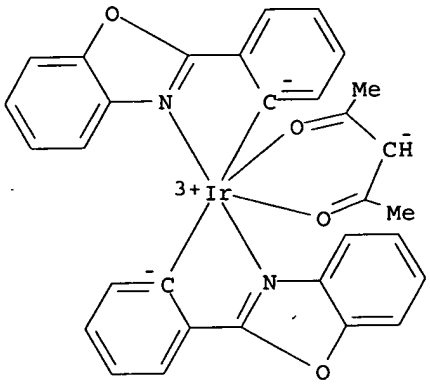


RN 343978-92-7 HCAPLUS
CN Iridium, bis[1-(2-benzoxazolyl-.kappa.N3)-2-naphthalenyl-.kappa.C](2,4-

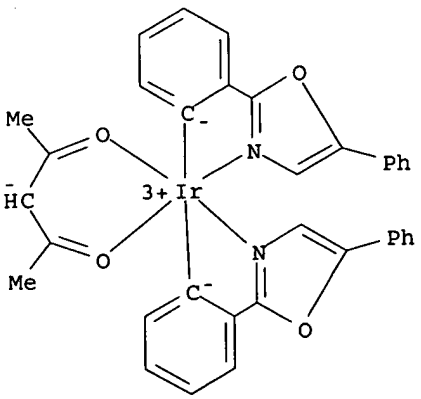
pentanedionato-.kappa.O,.kappa.O')-, (OC-6-33)- (9CI) (CA INDEX NAME)



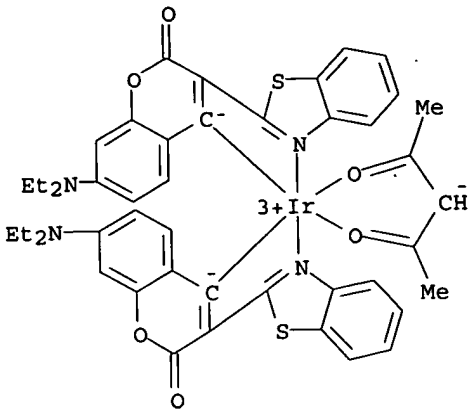
RN 343978-94-9 HCAPLUS
CN Iridium, bis[2-(2-benzoxazolyl-.kappa.N3)phenyl-.kappa.C](2,4-pentanedionato-.kappa.O,.kappa.O')-, (OC-6-33)- (9CI) (CA INDEX NAME)



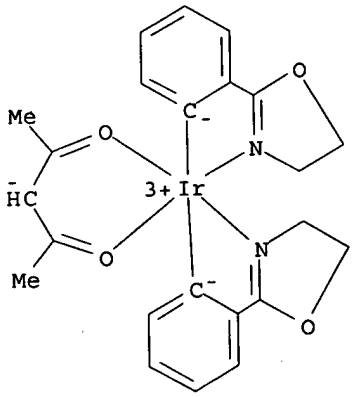
RN 344796-05-0 HCAPLUS
CN Iridium, (2,4-pentanedionato-.kappa.O,.kappa.O')bis[2-(5-phenyl-2-oxazolyl-.kappa.N3)phenyl-.kappa.C]-, (OC-6-33)- (9CI) (CA INDEX NAME)



RN 344796-06-1 HCAPLUS
CN Iridium, bis[3-(2-benzothiazolyl-.kappa.N3)-7-(diethylamino)-2-oxo-2H-1-benzopyran-4-yl-.kappa.C](2,4-pentanedionato-.kappa.O,.kappa.O')-, (OC-6-33)- (9CI) (CA INDEX NAME)

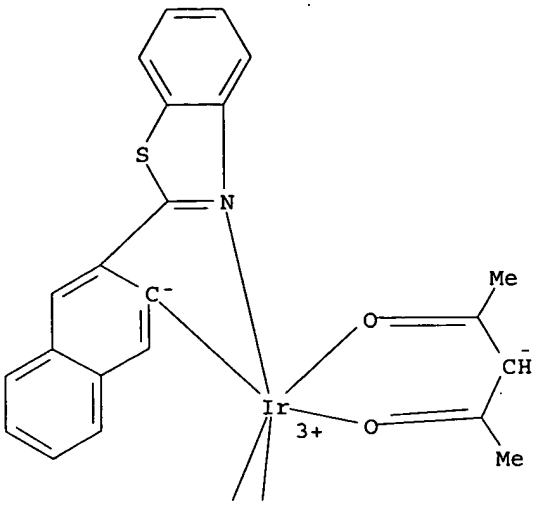


RN 344796-07-2 HCAPLUS
CN Iridium, bis[2-(4,5-dihydro-2-oxazolyl-.kappa.N3)phenyl-.kappa.C](2,4-pentanedionato-.kappa.O,.kappa.O')-, (OC-6-33)- (9CI) (CA INDEX NAME)

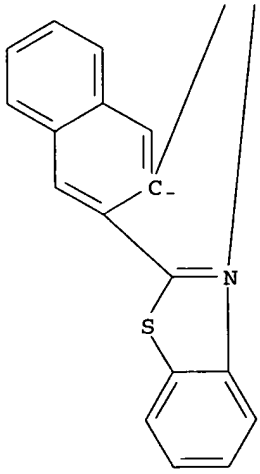


RN 344796-08-3 HCAPLUS
CN Iridium, bis[3-(2-benzothiazolyl-.kappa.N3)-2-naphthalenyl-.kappa.C](2,4-pentanedionato-.kappa.O,.kappa.O')-, (OC-6-33)- (9CI) (CA INDEX NAME)

PAGE 1-A

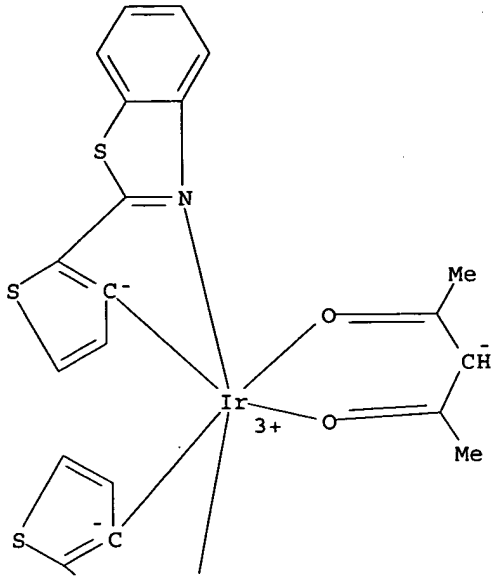


PAGE 2-A

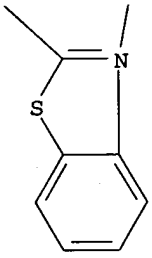


RN 344796-09-4 HCAPLUS
CN Iridium, bis[2-(2-benzothiazolyl-.kappa.N3)-3-thienyl-.kappa.C](2,4-pentanedionato-.kappa.O,.kappa.O')-, (OC-6-33)- (9CI) (CA INDEX NAME)

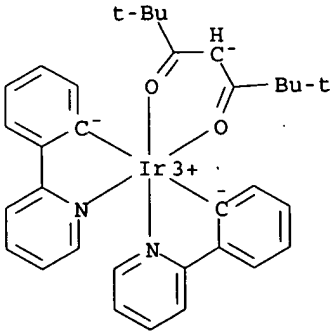
PAGE 1-A



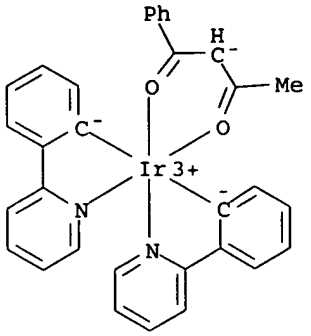
PAGE 2-A



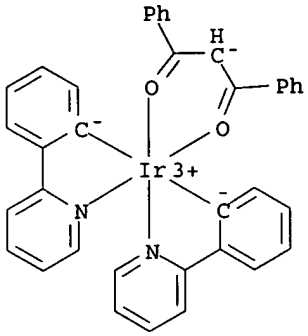
RN 344796-10-7 HCAPLUS
CN Iridium, bis[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C](2,2,6,6-tetramethyl-3,5-heptanedionato-.kappa.O,.kappa.O')-, (OC-6-33)- (9CI) (CA INDEX NAME)



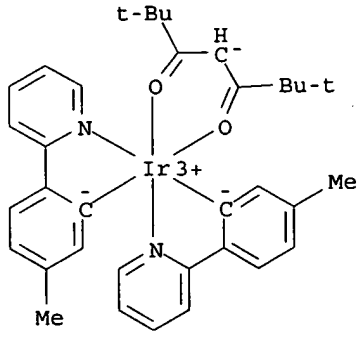
RN 344796-11-8 HCAPLUS
CN Iridium, (1-phenyl-1,3-butanedionato-.kappa.O,.kappa.O')bis[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-44)- (9CI) (CA INDEX NAME)



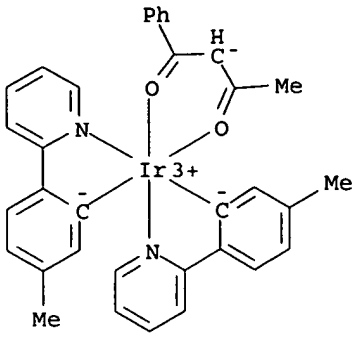
RN 344796-12-9 HCAPLUS
CN Iridium, (1,3-diphenyl-1,3-propanedionato-.kappa.O,.kappa.O')bis[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-33)- (9CI) (CA INDEX NAME)



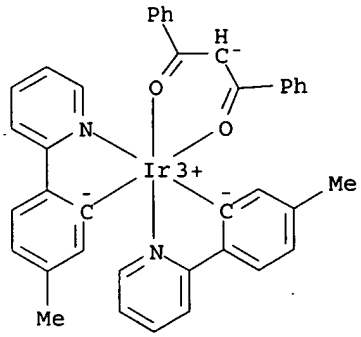
RN 344796-13-0 HCAPLUS
CN Iridium, bis[5-methyl-2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C](2,2,6,6-tetramethyl-3,5-heptanedionato-.kappa.O,.kappa.O')-, (OC-6-33)- (9CI) (CA INDEX NAME)



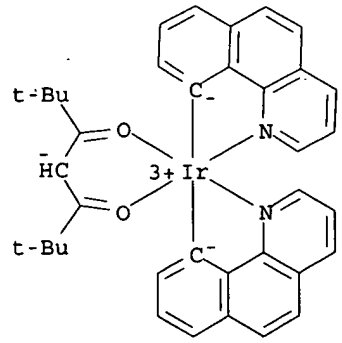
RN 344796-14-1 HCAPLUS
CN Iridium, bis[5-methyl-2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C](1-phenyl-1,3-butanedionato-.kappa.O,.kappa.O')-, (OC-6-44)- (9CI) (CA INDEX NAME)



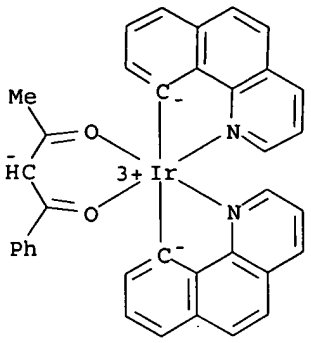
RN 344796-15-2 HCAPLUS
CN Iridium, (1,3-diphenyl-1,3-propanedionato-.kappa.O,.kappa.O')bis[5-methyl-2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-33)- (9CI) (CA INDEX NAME)



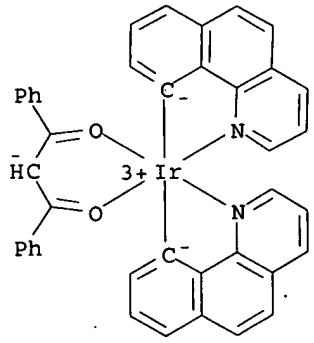
RN 344796-16-3 HCAPLUS
CN Iridium, bis(benzo[h]quinolin-10-yl-.kappa.C,.kappa.N)(2,2,6,6-tetramethyl-3,5-heptanedionato-.kappa.O,.kappa.O')-, (OC-6-33)- (9CI) (CA INDEX NAME)



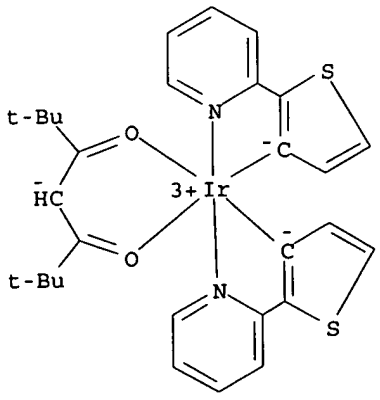
RN 344796-17-4 HCAPLUS
CN Iridium, bis(benzo[h]quinolin-10-yl-.kappa.C,.kappa.N)(1-phenyl-1,3-butanedionato-.kappa.O,.kappa.O')-, (OC-6-44)- (9CI) (CA INDEX NAME)



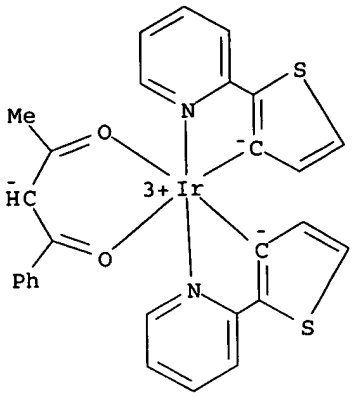
RN 344796-18-5 HCAPLUS
CN Iridium, bis(benzo[h]quinolin-10-yl-.kappa.C,.kappa.N)(1,3-diphenyl-1,3-propanedionato-.kappa.O,.kappa.O')-, (OC-6-33)- (9CI) (CA INDEX NAME)



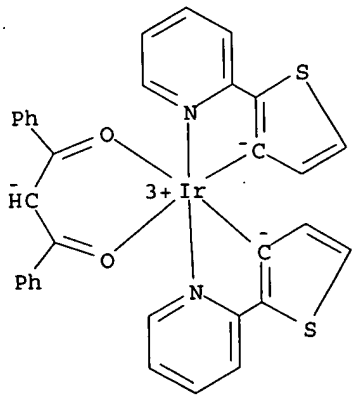
RN 344796-19-6 HCAPLUS
CN Iridium, bis[2-(2-pyridinyl-.kappa.N)-3-thienyl-.kappa.C](2,2,6,6-tetramethyl-3,5-heptanedionato-.kappa.O,.kappa.O')-, (OC-6-33)- (9CI) (CA INDEX NAME)



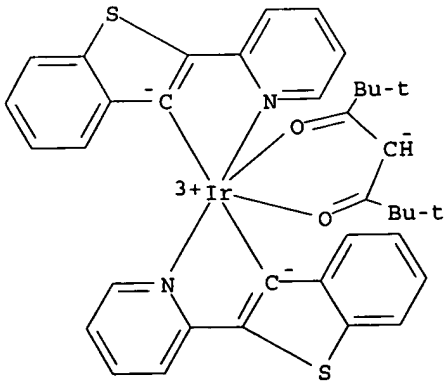
RN 344796-20-9 HCAPLUS
CN Iridium, (1-phenyl-1,3-butanedionato-.kappa.O,.kappa.O')bis[2-(2-pyridinyl-.kappa.N)-3-thienyl-.kappa.C]-, (OC-6-44)- (9CI) (CA INDEX NAME)



RN 344796-21-0 HCAPLUS
CN Iridium, (1,3-diphenyl-1,3-propanedionato-.kappa.O,.kappa.O')bis[2-(2-pyridinyl-.kappa.N)-3-thienyl-.kappa.C]-, (OC-6-33)- (9CI) (CA INDEX NAME)

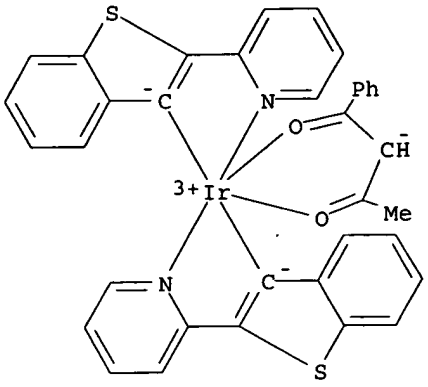


RN 344796-22-1 HCAPLUS
CN Iridium, bis[2-(2-pyridinyl-.kappa.N)benzo[b]thien-3-yl-.kappa.C](2,2,6,6-tetramethyl-3,5-heptanedionato-.kappa.O,.kappa.O')-, (OC-6-33)- (9CI) (CA INDEX NAME)

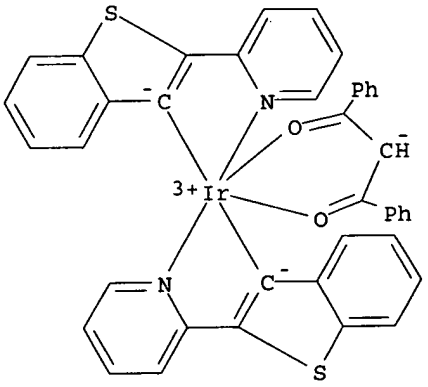


RN 344796-23-2 HCAPLUS
CN Iridium, (1-phenyl-1,3-butanedionato-.kappa.O,.kappa.O')bis[2-(2-pyridinyl-

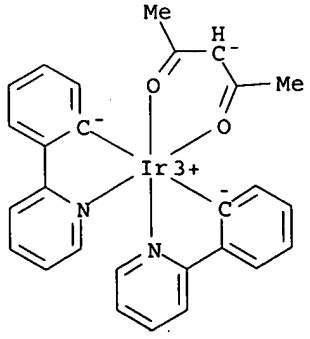
.kappa.N)benzo[b]thien-3-yl-.kappa.C]-, (OC-6-44)- (9CI) (CA INDEX NAME)

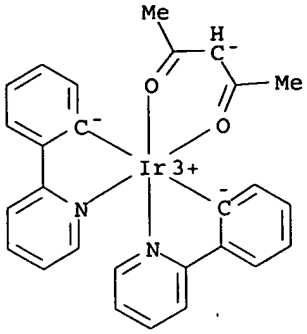


RN 344796-24-3 HCAPLUS
CN Iridium, (1,3-diphenyl-1,3-propanedionato-.kappa.O,.kappa.O')bis[2-(2-pyridinyl-.kappa.N)benzo[b]thien-3-yl-.kappa.C]-, (OC-6-33)- (9CI) (CA INDEX NAME)

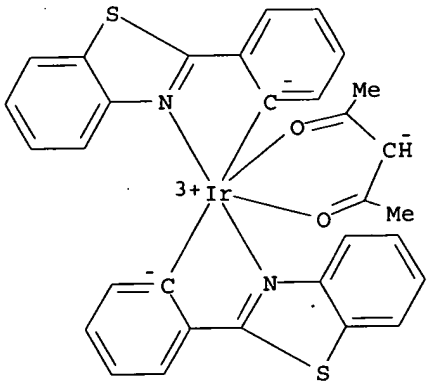


IT **337526-85-9P 337526-88-2P 343978-79-0P**
RL: DEV (Device component use); MOA (Modifier or additive use); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); USES (Uses)
(synthesis, photophys. characterization, and use in org. light emitting diodes of highly phosphorescent bis-cyclometalated iridium complexes)
RN 337526-85-9 HCAPLUS
CN Iridium, (2,4-pentanedionato-.kappa.O,.kappa.O')bis[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-33)- (9CI) (CA INDEX NAME)

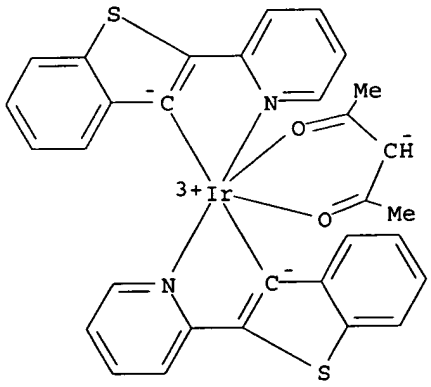




RN 337526-88-2 HCAPLUS
CN Iridium, bis[2-(2-benzothiazolyl-.kappa.N3)phenyl-.kappa.C](2,4-pentanedionato-.kappa.O,.kappa.O')-, (OC-6-33)- (9CI) (CA INDEX NAME)



RN 343978-79-0 HCAPLUS
CN Iridium, (2,4-pentanedionato-.kappa.O,.kappa.O')bis[2-(2-pyridinyl-.kappa.N)benzo[b]thien-3-yl-.kappa.C]-, (OC-6-33)- (9CI) (CA INDEX NAME)



1 of 2

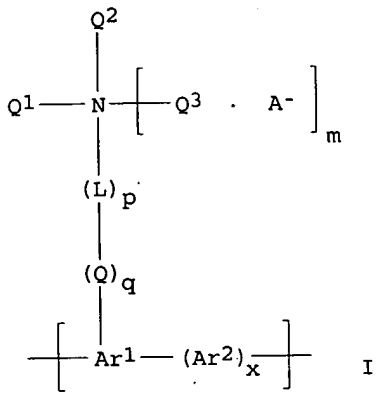
L95 ANSWER 6 OF 29 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2002:906359 HCAPLUS
DN 138:5032
TI **Electroluminescent** polymers and use thereof in light-emitting devices
IN Pei, Qibing
PA Sri International, USA
SO PCT Int. Appl., 55 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C08G073-00
CC 37-3 (Plastics Manufacture and Processing)
Section cross-reference(s): 73, 76

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002094910	A1	20021128	WO 2002-US16180	20020522
	WO 2002094910	B1	20030116		
	US 2002193551	A1	20021219	US 2001-864704	20010523
PRAI	US 2001-864704	A	20010523		

5/23/01 priority

GI



I

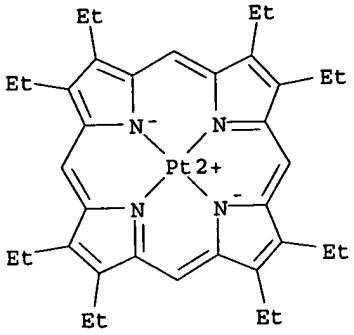
AB The invention provides conjugated polymers that have good soly. and semicond., and that display high photoluminescent and **electroluminescent** efficiency. Representative polymers contg. monomer units having the general structure of formula (I), wherein: Ar1 and Ar2 are independently selected from the group consisting of monocyclic, bicyclic and polycyclic arylene, heteroarylene, substituted arylene and substituted heteroarylene groups; L is alkylene, alkenylene, substituted alkylene, substituted alkenylene, heteroalkylene, heteroalkenylene, substituted heteroalkylene, substituted heteroalkenylene, arylene, heteroarylene, substituted arylene, substituted heteroarylene, or a combination thereof; Q is a heteroatom; m is zero or 1; p is zero or 1, and q is zero or 1, with the proviso that when p is zero, then q is zero; x is zero or 1; Q1 and Q2 are independently selected from the group consisting of H, aryl, heteroaryl, substituted aryl, substituted heteroaryl, alkyl, substituted alkyl, heteroalkyl, and substituted heteroalkyl, and Q3 is selected from the group consisting of alkyl, substituted alkyl, heteroalkyl, and substituted heteroalkyl, with the proviso that when m is 1, Q1 and Q2 are other than H; and A- is a neg. charged counterion. **Electroluminescent** and other devices contg. a polymer of the invention are also provided.

IT **31248-39-2 337526-88-2**
RL: MOA (Modifier or additive use); USES (Uses)
(luminescent **dopant**; conjugated **electroluminescent**

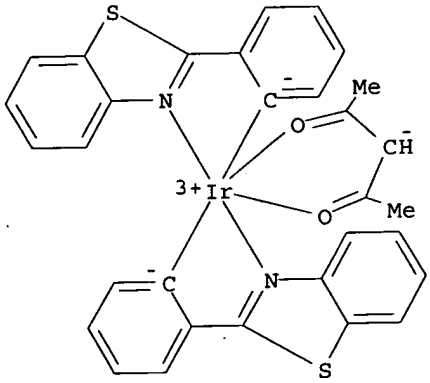
polymers, their blue light-emitting compns., and use thereof in light-emitting devices)

RN 31248-39-2 HCAPLUS
CN Platinum, [2,3,7,8,12,13,17,18-octaethyl-21H,23H-porphinato(2-)-.kappa.N21,.kappa.N22,.kappa.N23,.kappa.N24]-, (SP-4-1)- (9CI) (CA INDEX NAME)

2 of 2



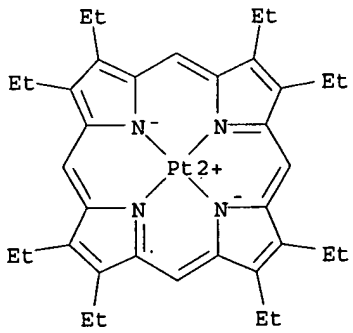
RN 337526-88-2 HCAPLUS
CN Iridium, bis[2-(2-benzothiazolyl-.kappa.N3)phenyl-.kappa.C](2,4-pentanedionato-.kappa.O,.kappa.O')-, (OC-6-33)- (9CI) (CA INDEX NAME)



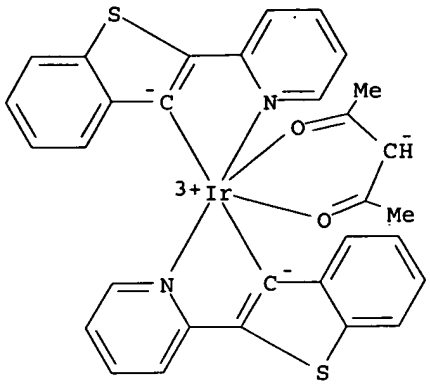
L95 ANSWER 21 OF 29 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2001:200050 HCAPLUS
TI Enhancing the Efficiencies, Color Purities and Lifetimes of Organic Light Emitting Diodes
AU Thompson, Mark E.; Forrest, Stephen R.
CS Chemistry Department, University of Southern California, Los Angeles, CA, 90089-0744, USA
SO Abstracts of Papers - American Chemical Society (2001), 221st, COMSCI-003
CODEN: ACSRAL; ISSN: 0065-7727
PB American Chemical Society
DT Journal; Meeting Abstract
LA English
AB My presentation will begin with a general discussion of **electroluminescence** and the construction of org. light emitting diodes. In order to use org. light emitting diodes (OLEDs) in display and lighting applications it is important to be able to accurately tune the color of emission. Doping of OLEDs with fluorescent dyes has been known for many years as a useful means to control the color of OLEDs. Unfortunately, the use of a fluorescent dye leads to an upper limit of 25% on the internal quantum efficiency, due to the small fraction of singlet excitons created on **hole-electron recombination**. The use of phosphorescent dopants, however, allows the efficient utilization of both singlet and triplet excitons, removing the 25% upper limit on the internal efficiency. We have fabricated satd. red, orange, yellow and green OLEDs, utilizing phosphorescent dopants. The quantum efficiencies of these devices are quite good, with measured external efficiencies as high as 15% (internal eff. The phosphorescent dopants in these devices are **heavy metal** contg. mols. (i.e. Pt, and Ir), prepd. as both metalloporphyrins and **organometallic complexes**. The **heavy metals** in these metal **complexes** gives efficient emission from triplet or highly **spin** orbit coupled **states**. I will discuss the important parameters in designing electrophosphorescent OLEDs as well as their strengths and limitations. Accelerated aging studies, on packaged devices, have shown that phosphorescence based OLEDs can have very long device lifetimes. These studies will also be discussed.

Sheet 1 of 2

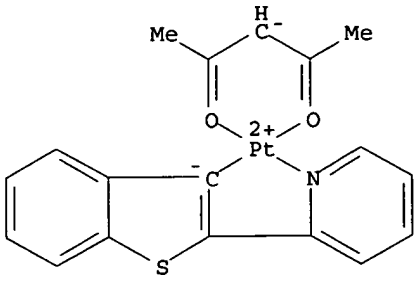
L95 ANSWER 22 OF 29 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2001:171115 HCAPLUS
DN 135:67955
TI High-efficiency red electrophosphorescent devices
AU Adachi, Chihaya; Baldo, Marc A.; Forrest, Stephen R.; Lamansky, Sergey; Thompson, Mark E.; Kwong, Raymond C.
CS Center for Photonics and Optoelectronic Materials (POEM), Department of Electrical Engineering, Princeton University, Princeton, NJ, 08544, USA
SO Applied Physics Letters (2001), 78(11), 1622-1624
CODEN: APPLAB; ISSN: 0003-6951
PB American Institute of Physics
DT Journal
LA English
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 22, 29, 76
AB The authors demonstrate high-efficiency red electrophosphorescent org. light-emitting devices employing bis(2-(2'-benzo[4,5-.alpha.]thienyl)pyridinato-N,C3')iridium(acetylacetonate) [Btp2Ir(acac)] as a red phosphor. A max. external quantum efficiency of .eta.ext=(7.0.+-.0.5)% and power efficiency of .eta.p=(4.6.+-.0.5) lm/W are achieved at a c.d. of J=0.01 mA/cm2. At a higher c.d. of J=100 mA/cm2, .eta.ext=(2.5.+-.0.3)% and .eta.p=(0.56.+-.0.05) lm/W are obtained. The **electroluminescent** spectrum has a max. at a wavelength of .lambda.max=616 nm with addnl. intensity peaks at .lambda.sub=670 and 745 nm. The Commission Internationale de L'Eclairage coordinates of (x=0.68, yr=0.32) are close to meeting video display stds. The short phosphorescence lifetime (.apprx.4 .mu.s) of Btp2Ir(acac) leads to a significant improvement in .eta.ext at high currents as compared to the previously reported red phosphor, 2,3,7,8,12,13,17,18-octaethyl-12H,23H-porphine platinum (II) (PtOEP) with a lifetime of .apprx.50 .mu.s.
IT **31248-39-2**, Platinum(2+) octaethylporphyrin
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(**electroluminescence** characteristics of OLED contg.)
RN 31248-39-2 HCAPLUS
CN Platinum, [2,3,7,8,12,13,17,18-octaethyl-21H,23H-porphinato(2-)-.kappa.N21,.kappa.N22,.kappa.N23,.kappa.N24]-, (SP-4-1)- (9CI) (CA INDEX NAME)



IT **343978-79-0 345659-08-7**
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(guest phosphor; high-efficiency red electrophosphorescent devices contg.)
RN 343978-79-0 HCAPLUS
CN Iridium, (2,4-pentanedionato-.kappa.O,.kappa.O')bis[2-(2-pyridinyl-.kappa.N)benzo[b]thien-3-yl-.kappa.C]-, (OC-6-33)- (9CI) (CA INDEX NAME)

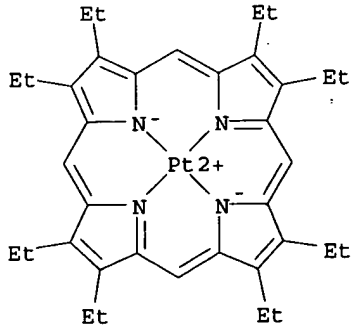


RN 345659-08-7 HCAPLUS
CN Platinum, (2,4-pentanedionato-.kappa.O,.kappa.O')[2-(2-pyridinyl-.kappa.N)benzo[b]thien-3-yl-.kappa.C]-, (SP-4-3)- (9CI) (CA INDEX NAME)

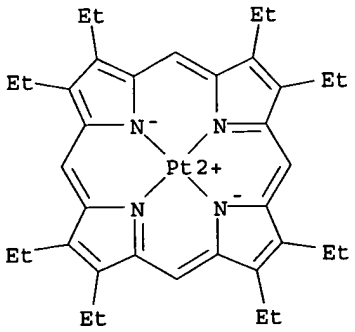


L95 ANSWER 26 OF 29 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2000:54963 HCAPLUS
DN 132:187092
TI Electrophosphorescence in organic light emitting diodes
AU Thompson, Mark E.; Burrows, Paul E.; Forrest, Stephen R.
CS Department of Chemistry, University of Southern California, Los Angeles, CA, 90089, USA
SO Current Opinion in Solid State & Materials Science (1999), 4(4), 369-372
CODEN: COSSFX; ISSN: 1359-0286
PB Elsevier Science Ltd.
DT Journal
LA English
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 22
AB The singlet-triplet branching favoring the triplet state gives fluorescence-based OLEDs a serious disadvantages compared to devices that utilize both singlet and triplets. If both singlet and triplet states are efficiently utilized, as seen for phosphorescence-based OLEDs, the quantum efficiency is not limited by the **spin states** of excitons formed in the EL process. The internal quantum efficiency measured for the phosphorescence-based (platinum octaethylporphine) OLEDs of 0.23 is near the upper limit for fluorescence-based OLEDs.
IT **Electroluminescent** devices
Energy transfer
Fluorescence
(electrophosphorescence in org. light emitting diodes)
IT Exciton
(singlet; electrophosphorescence in org. light emitting diodes)

IT **31248-39-2**
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(electrophosphorescence in org. light emitting diodes)
RN 31248-39-2 HCAPLUS
CN Platinum, [2,3,7,8,12,13,17,18-octaethyl-21H,23H-porphinato(2-)-.kappa.N21,.kappa.N22,.kappa.N23,.kappa.N24]-, (SP-4-1)- (9CI) (CA INDEX NAME)



L95 ANSWER 27 OF 29 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 1999:226087 HCAPLUS
DN 130:288996
TI Harvesting singlet and triplet energy in polymer LEDs
AU Cleave, Vicki; Yahioglu, Goghan; Le Barny, Pierre; Friend, Richard H.; Tessler, Nir
CS Cavendish Lab., Cambridge Univ., Cambridge, CB3 0HE, UK
SO Advanced Materials (Weinheim, Germany) (1999), 11(4), 285-288
CODEN: ADVMEW; ISSN: 0935-9648
PB Wiley-VCH Verlag GmbH
DT Journal
LA English
CC 73-12 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 38
AB The performance of polymeric LEDs was improved using Pt octaethylporphyrin (PtOEP), an efficient triplet emitter, as a dopant in the semiconducting polymer host (poly[4-(N-4-vinylbenzyloxyethyl-N-methylamino)-N-(2,5-di-tert-butylphenylnaphthalimide)], (PNP)). With this system, energy was captured from both the singlet and triplet **excited states** and transformed into emitted light, thus, surpassing the 25% limit set by **spin** statistics. The mechanism of excitation by PtOEP was investigated using time-resolved measurements of the light emission.
IT **31248-39-2**, Platinum(2+) octaethylporphyrin
RL: DEV (Device component use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(dopant; singlet and triplet energy transfer in polymer LEDs doped with Pt octaethylporphyrin)
RN 31248-39-2 HCAPLUS
CN Platinum, [2,3,7,8,12,13,17,18-octaethyl-21H,23H-porphinato(2-)-.kappa.N21,.kappa.N22,.kappa.N23,.kappa.N24]-, (SP-4-1)- (9CI) (CA INDEX NAME)

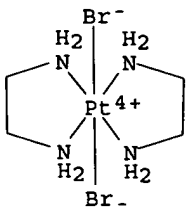


Sheet 1 of 3

L95 ANSWER 28 OF 29 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 1998:54893 HCAPLUS
DN 128:160458
TI **Conversion** of Excitons to **Spin**-Soliton Pairs in Quasi-One-Dimensional Halogen-Bridged Metal Complexes
AU Okamoto, H.; Kaga, Y.; Shimada, Y.; Oka, Y.; Iwasa, Y.; Mitani, T.; Yamashita, M.
CS Research Institute for Scientific Measurements, Tohoku University, Sendai, 980-77, Japan
SO Physical Review Letters (1998), 80(4), 861-864
CODEN: PRLTAO; ISSN: 0031-9007
PB American Physical Society
DT Journal
LA English
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 77, 78
AB We have characterized the gap states from photoinduced absorption and photoinduced ESR studies on one-dimensional (1D) halogen-bridged metal complexes with degenerate and nondegenerate charge-d. wave (CDW) ground state. A comparison of excitation profiles of self-trapped exciton (STE) luminescence with those of the gap states demonstrates that excitons are relaxed to spin-soliton pairs. From an anal. of the temp. dependence of luminescence decay time, conversion from the STE to the solitonic state is found to occur through a finite potential barrier, the magnitude of which strongly depends on the degeneracy of the CDW.
IT Exciton
Ground state
Luminescence
Self-trapped exciton
Solitons
(**conversion** of exciton to **spin**-soliton pair in quasi-one-dimensional halogen-bridged metal complex)
IT **62535-08-4 67844-71-7**
RL: PRP (Properties)
(**conversion** of exciton to **spin**-soliton pair in quasi-one-dimensional halogen-bridged metal complex)
RN 62535-08-4 HCAPLUS
CN Platinum(2+), bis(1,2-ethanediamine-.kappa.N,.kappa.N')-, (SP-4-1)-, (OC-6-12)-dibromobis(1,2-ethanediamine-.kappa.N,.kappa.N')platinum(2+) perchlorate (1:1:4) (9CI) (CA INDEX NAME)

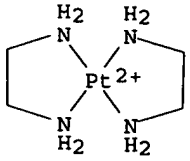
CM 1

CRN 62535-07-3
CMF C4 H16 Br2 N4 Pt
CCI CCS



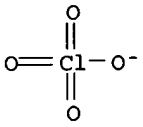
CM 2

CRN 19184-30-6
CMF C4 H16 N4 Pt
CCI CCS



CM 3

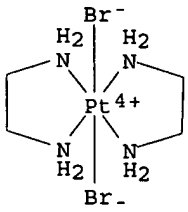
CRN 14797-73-0
CMF Cl O4



RN 67844-71-7 HCAPLUS
CN Platinum(2+), dibromobis(1,2-ethanediamine-.kappa.N,.kappa.N')-, (OC-6-12)-, (SP-4-1)-bis(1,2-ethanediamine-.kappa.N,.kappa.N')palladium(2+) perchlorate (1:1:4) (9CI) (CA INDEX NAME)

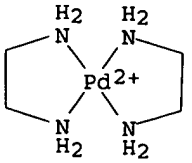
CM 1

CRN 62535-07-3
CMF C4 H16 Br2 N4 Pt
CCI CCS



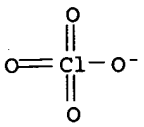
CM 2

CRN 22573-08-6
CMF C4 H16 N4 Pd
CCI CCS



CM 3

CRN 14797-73-0
CMF Cl O4

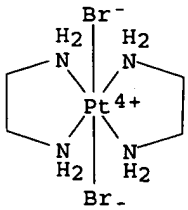


Sheet 1 of 3

L95 ANSWER 29 OF 29 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 1998:54009 HCAPLUS
DN 128:173388
TI Dynamics of photoinduced gap states and self-trapped excitons in the MX chain compounds with degenerate and nondegenerate CDW ground states
AU Okamoto, Hiroshi; Kaga, Yusei; Oka, Yasuo; Yamashita, Masahiro; Mitani, Tadaoki
CS Research Institute for Scientific Measurements, Tohoku University, Sendai, 980, Japan
SO Proceedings of SPIE-The International Society for Optical Engineering (1997), 3145(Optical Probes of Conjugated Polymers), 459-467
CODEN: PSISDG; ISSN: 0277-786X
PB SPIE-The International Society for Optical Engineering
DT Journal
LA English
CC 73-1 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
AB Excitation profiles and time characteristics of luminescence from the self-trapped exciton (STE) have been measured on the quasi-one-dimensional halogen-bridged metal complexes having degenerate and nondegenerate CDW ground states. From the comparison of the excitation profiles of the STE luminescence with those of the gap states, it was demonstrated that excitons are **converted** to **spin**-soliton pairs. This conversion occurs from the STE through a finite potential barrier, magnitude of which strongly depends on the degeneracy of CDW.
IT Coordination compounds
RL: PRP (Properties)
(dynamics of photoinduced gap states and self-trapped excitons in MX chain compds. with degenerate and nondegenerate CDW ground states)
IT **62535-08-4 67844-71-7**
RL: PRP (Properties)
(dynamics of photoinduced gap states and self-trapped excitons in MX chain compds. with degenerate and nondegenerate CDW ground states)
IT **62535-08-4 67844-71-7**
RL: PRP (Properties)
(dynamics of photoinduced gap states and self-trapped excitons in MX chain compds. with degenerate and nondegenerate CDW ground states)
RN 62535-08-4 HCAPLUS
CN Platinum(2+), bis(1,2-ethanediamine-.kappa.N,.kappa.N')-, (SP-4-1)-, (OC-6-12)-dibromobis(1,2-ethanediamine-.kappa.N,.kappa.N')platinum(2+) perchlorate (1:1:4) (9CI) (CA INDEX NAME)

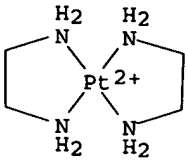
CM 1

CRN 62535-07-3
CMF C4 H16 Br2 N4 Pt
CCI CCS



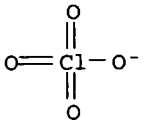
CM 2

CRN 19184-30-6
CMF C4 H16 N4 Pt
CCI CCS



CM 3

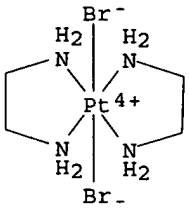
CRN 14797-73-0
CMF Cl O4



RN 67844-71-7 HCAPLUS
CN Platinum(2+), dibromobis(1,2-ethanediamine-.kappa.N,.kappa.N')-, (OC-6-12)-, (SP-4-1)-bis(1,2-ethanediamine-.kappa.N,.kappa.N')palladium(2+) perchlorate (1:1:4) (9CI) (CA INDEX NAME)

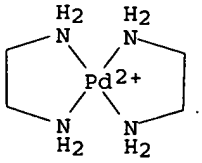
CM 1

CRN 62535-07-3
CMF C4 H16 Br2 N4 Pt
CCI CCS



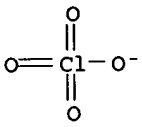
CM 2

CRN 22573-08-6
CMF C4 H16 N4 Pd
CCI CCS



CM 3

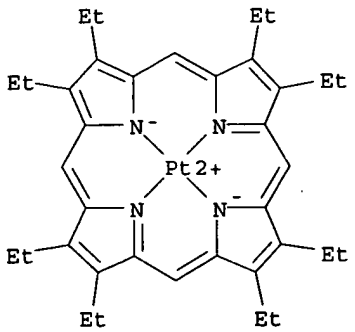
CRN 14797-73-0
CMF Cl O4



L96 ANSWER 6 OF 19 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2002:928080 HCAPLUS
DN 138:17951
TI Organometallic compounds and emission-shifting organic electrophosphorescence
IN Lamansky, Sergey; Thompson, Mark E.; Adamovich, Vadim; Djurovich, Peter I.; Adachi, Chihaya; Baldo, Marc A.; Forrest, Stephen R.; Kwong, Raymond
PA Trustee of Princeton University, USA
SO U.S. Pat. Appl. Publ., 87 pp., Cont.-in-part of U.S. Ser. No. 637,766.
CODEN: USXXCO
DT Patent
LA English
IC ICM H05B033-14
ICS C09K011-06
NCL 428690000; 428917000; 313504000; 313506000; 257102000; 257103000; 252301160; 544225000; 546002000; 548101000
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 76, 78
FAN.CNT 2

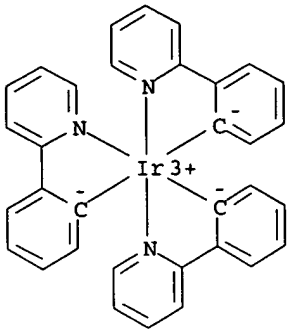
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2002182441	A1	20021205	US 2001-978455	20011016
PRAI US 2000-637766	A2	20000811		
US 2001-283814P	P	20010413		

AB Org. light-emitting devices including an emissive layer comprising an organometallic compd. are described in which the organometallic compd. comprises a heavy transition metal (e.g., Os, Ir, Pt, or Au) that produces an efficient phosphorescent emission at room temp. from a mixt. of metal-to-ligand charge transfer and .pi.-.pi.* ligand states; .gtoreq.1 mono-anionic bidentate carbon-coordination ligand bound to the heavy transition metal, the ligand(s) being substituted with an electron-donating substituent and/or an electron-withdrawing substituent which shifts the emission, relative to the unsubstituted ligand, to either the blue, green, or red region of the visible spectrum; and .gtoreq.1 non-monoanionic bidentate carbon-coordination ligand bound to the heavy transition metal which ligand(s) causes the emission to have a well defined vibronic structure. The organometallic compds. are also claimed.
IT **31248-39-2 94928-86-6**, fac-Tris(2-phenylpyridine)iridium
RL: DEV (Device component use); USES (Uses)
(org. light-emitting devices using emission shifting organometallic complexes and the complexes)
RN 31248-39-2 HCAPLUS
CN Platinum, [2,3,7,8,12,13,17,18-octaethyl-21H,23H-porphinato(2-)-.kappa.N21,.kappa.N22,.kappa.N23,.kappa.N24]-, (SP-4-1)- (9CI) (CA INDEX NAME)



RN 94928-86-6 HCAPLUS
CN Iridium, tris[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-22)- (9CI) (CA INDEX NAME)

Sheet 1 of 2


N
C
N
Ir 3+
C
C
N

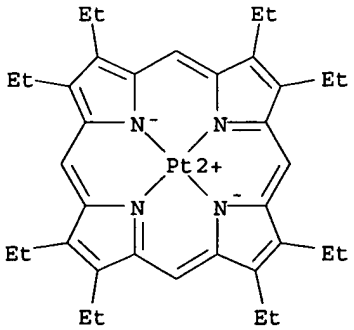
L96 ANSWER 12 OF 19 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2002:754786 HCAPLUS
DN 137:270943
TI Deposition apparatus and method for manufg. an org. luminescent element which requires a lower drive voltage and has a longer life
IN Yamazaki, Shunpei; Seo, Satoshi; Mizukami, Mayumi
PA Japan
SO U.S. Pat. Appl. Publ., 42 pp.
CODEN: USXXCO
DT Patent
LA English
IC ICM C23C016-00
ICS B05D005-06
NCL 118719000
CC 75-1 (Crystallography and Liquid Crystals)
Section cross-reference(s): 74
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2002139303	A1	20021003	US 2002-62005	20020131
CN 1369573	A	20020918	CN 2002-103325	20020131
JP 2002302757	A2	20021018	JP 2002-22741	20020131
PRAI JP 2001-26184	A	20010201		

AB A deposition app. is provided for manufg. an org. compd. layer having a plurality of function regions. The deposition app. includes a plurality of evapn. sources within a deposition chamber, for enabling continuous formation of resp. function regions comprised of org. compds. and, further, formation of a mixed region at an interface between adjacent ones of the function regions. With the deposition app. having such fabrication chamber, it is possible to prevent impurity contamination between the functions regions and further possible to form an org. compd. layer with an energy gap relaxed at the interface.

IT **31248-39-2**, 2,3,7,8,12,13,17,18-Oc-taethyl-21H,23H-porphyrin-platinum **94928-86-6**, Tris (2-phenylpyridine)iridium
RL: DEV (Device component use); FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); PYP (Physical process); FORM (Formation, nonpreparative); PROC (Process); USES (Uses)
(luminescent ability; deposition app. and method for manufg. luminescent element having plurality of function regions)

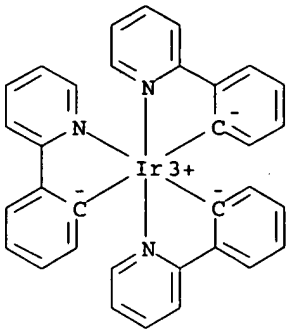
RN 31248-39-2 HCAPLUS
CN Platinum, [2,3,7,8,12,13,17,18-octaethyl-21H,23H-porphinato(2-)-.kappa.N21,.kappa.N22,.kappa.N23,.kappa.N24]-, (SP-4-1)- (9CI) (CA INDEX NAME)



RN 94928-86-6 HCAPLUS
CN Iridium, tris[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-22)- (9CI) (CA INDEX NAME)

2/1/01 priority

Sheet 1 of 2


N
C
Ir 3+
C
C
N

L96 ANSWER 13 OF 19 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2002:616081 HCAPLUS
DN 137:161254
TI Light emitting device and manufacturing method thereof
IN Seo, Satoshi; Yamazaki, Shunpei
PA Japan
SO U.S. Pat. Appl. Publ., 41 pp.
CODEN: USXXCO
DT Patent
LA English
IC ICM H01L035-24
NCL 257040000
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 76
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002109136	A1	20020815	US 2002-43812	20020110
	JP 2002319492	A2	20021031	JP 2002-10748	20020118
PRAI	JP 2001-10887	A	20010118		

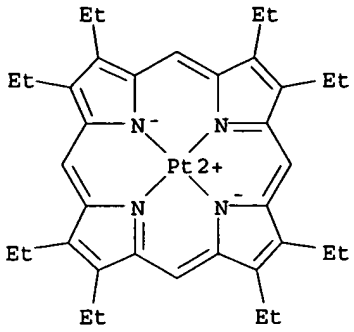
AB A org. light emitting device is described comprising an anode; a cathode; and an org. compd. film sandwiched between the anode and the cathode, wherein the org. compd. film comprises at least two compds. selected from the group consisting of a hole injecting compd. that receives holes from the anode; a hole transporting compd. that has a hole mobility that is larger than its electron mobility; an electron transporting compd. that has an electron mobility that is larger than its hole mobility; an electron injecting compd. that receives electrons from the cathode; and a blocking compd. capable of stopping the movement of holes or electrons, wherein the two compds. selected are materials capable of undergoing vacuum evapn., wherein the org. compd. film comprises a region in which the two compds. are mixed, and wherein the elec. current vs. elec. voltage property of the org. light emitting elements show a rectification property, wherein the org. compd. film comprises a region in which the first and the second org. compd. are mixed, wherein the concn. of the two compds. change within the region, or wherein the org. compd. film comprises a region in which the concn. of the first and the second org. compd. continuously changes. A method of fabricating the light emitting device is also described entailing providing a substrate comprising an electrode; making a vacuum chamber comprising at least first and second org. compd. evapn. sources in a reduced pressure state by reducing the pressure within the vacuum chamber to be equal to or less than 10-3 Pa; and performing evapn. of the first org. compd. in the first org. compd. evapn. source and a second org. compd. contained in the second org. compd. evapn. source on the substrate while a pump for reducing the pressure within the vacuum chamber is operated. wherein each of the first and second org. compd. evapn. sources comprises a container comprising an org. compd., and wherein the second org. compd. is evapd. next after the first org. compd. is evapd., under a state in which the first org. compd. evapn. source is not heated and in which an atm. of the first org. compd. remains within the vacuum chamber.

IT **31248-39-2**, (2,3,7,8,12,13,17,18-Octaethyl-21H-23H-porphyrin)platinum **94928-86-6**, Tris(2-phenylpyridine)iridium
RL: DEV (Device component use); USES (Uses)
(light emitting device and fabrication method)

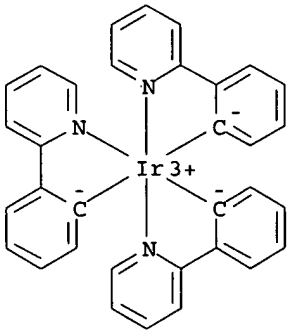
RN 31248-39-2 HCAPLUS
CN Platinum, [2,3,7,8,12,13,17,18-octaethyl-21H,23H-porphinato(2-)-.kappa.N21,.kappa.N22,.kappa.N23,.kappa.N24]-, (SP-4-1)- (9CI) (CA INDEX NAME)

1/18/01 priority

Sheet 1 of 2



RN 94928-86-6 HCAPLUS
CN Iridium, tris[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-22)- (9CI) (CA INDEX NAME)



L96 ANSWER 15 OF 19 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2002:290668 HCAPLUS
DN 136:316680
TI Luminescent ink for printing of organic luminescent devices
IN Li, Xiao-Chang Charles
PA Canon Kabushiki Kaisha, Japan
SO U.S., 13 pp.
CODEN: USXXAM
DT Patent
LA English
IC ICM H01L051-40
ICS C09K011-06
NCL 252301160
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 35, 36, 74

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6372154	B1	20020416	US 1999-476396	19991230

PRAI US 1999-476396 19991230

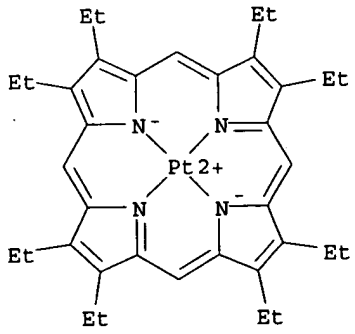
1999 priority

AB Org. luminescent ink (L-ink) is disclosed for use in printing thin films of org. luminescent material. The L-ink is particularly useful in fabricating org. optoelectronic devices, e.g. org. luminescent devices. The L-ink contains .gtoreq.1 org. luminescent material mixed with a solvent and other functional additives to provide the necessary optical, electronic and morphol. properties for light-emitting devices (LEDs). The additives play an important role either for enhanced thin film printing or for better performance of the optoelectronic device. The functional additives may be chem. bound to the luminescent compds. or polymers. Luminescent org. compds., oligomers, or polymers with relatively low soln. viscosity, good thin film formability, and good charge transporting properties, are preferred. The L-inks can be cross-linked under certain conditions to enhance thin film properties. The L-ink can be used in various printing methods, such as screen printing, stamp printing, and preferably ink-jet printing (including bubble-jet printing).

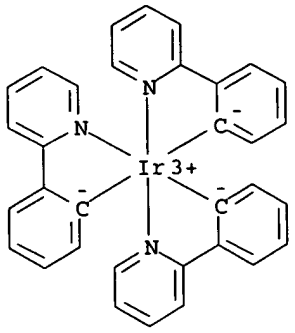
Sheet 1 of 2

IT **31248-39-2 94928-86-6**, Tris(2-phenylpyridine) iridium
RL: CPS (Chemical process); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(luminescent ink for printing of org. luminescent devices)

RN 31248-39-2 HCAPLUS
CN Platinum, [2,3,7,8,12,13,17,18-octaethyl-21H,23H-porphinato(2-).kappa.N21,.kappa.N22,.kappa.N23,.kappa.N24]-, (SP-4-1)- (9CI) (CA INDEX NAME)



RN 94928-86-6 HCAPLUS
CN Iridium, tris[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-22)- (9CI) (CA INDEX NAME)


N
C
N
Ir 3+
C
C
N

L96 ANSWER 16 OF 19 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2002:143099 HCAPLUS
DN 136:191506
TI Organometallic compounds and emission-shifting organic electrophosphorescence
IN Lamansky, Sergey; Thompson, Mark E.; Adamovich, Vadim; Djurovich, Peter L.; Adachi, Chihaya; Baldo, Marc A.; Forrest, Stephen R.; Kwong, Raymond C.
PA The Trustees of Princeton University, USA; The University of Southern California; Universal Display Corporation
SO PCT Int. Appl., 155 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM H05B033-14
ICS C09K011-06; C07D213-02; C07D231-10; C07D241-10; C07D333-52
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 76, 78

FAN.CNT 2

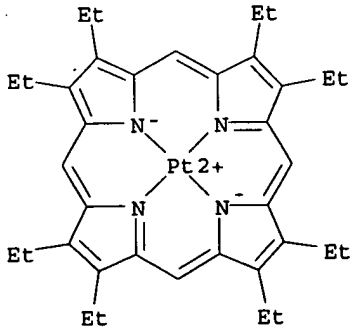
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002015645	A1	20020221	WO 2001-US25108	20010810
	AU 2001083274	A5	20020225	AU 2001-83274	20010810
	EP 1325671	A1	20030709	EP 2001-962061	20010810
PRAI	US 2000-637766	A	20000811		
	US 2001-283814P	P	20010413		
	WO 2001-US25108	W	20010810		

2000 priority

AB Org. light-emitting devices including an emissive layer comprising an organometallic compd. are described in which the organometallic compd. comprises a heavy transition metal (e.g., Os, Ir, Pt, or Au) that produces an efficient phosphorescent emission at room temp. from a mixt. of metal-to-ligand charge transfer and .pi.-.pi.* ligand states; .gtoreq.1 mono-anionic bidentate carbon-coordination ligand bound to the heavy transition metal, the ligand(s) being substituted with an electron-donating substituent and/or an electron-withdrawing substituent which shifts the emission, relative to the unsubstituted ligand, to either the blue, green, or red region of the visible spectrum; and .gtoreq.1 non-monoanionic bidentate carbon-coordination ligand bound to the heavy transition metal which ligand(s) causes the emission to have a well defined vibronic structure. The organometallic compds. are also claimed.

IT **31248-39-2 94928-86-6**, fac-Tris(2-phenylpyridine)iridium
RL: DEV (Device component use); USES (Uses)
(org. light-emitting devices using emission shifting organometallic complexes and the complexes)

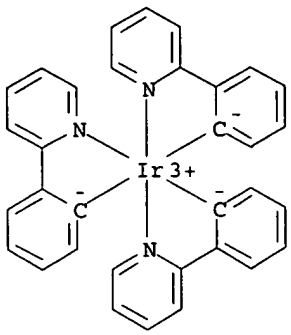
RN 31248-39-2 HCAPLUS
CN Platinum, [2,3,7,8,12,13,17,18-octaethyl-21H,23H-porphinato(2-)-.kappa.N21,.kappa.N22,.kappa.N23,.kappa.N24]-, (SP-4-1)- (9CI) (CA INDEX NAME)



RN 94928-86-6 HCAPLUS

Sheet 1 of 2

CN Iridium, tris[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-22)- (9CI)
(CA INDEX NAME)



L96 ANSWER 17 OF 19 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2002:66774 HCAPLUS
DN 136:126314
TI Luminescence device
IN Tsuboyama, Akira; Okada, Shinjiro; Takiguchi, Takao; Moriyama, Takashi; Kamatani, Jun
PA Canon Kabushiki Kaisha, Japan
SO Eur. Pat. Appl., 16 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM H05B033-14
ICS H01L051-20; C09K019-54
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 75, 76
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 1175129	A1	20020123	EP 2001-117367	20010718
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002043056	A2	20020208	JP 2000-218321	20000719
US 2002038860	A1	20020404	US 2001-904505	20010716
PRAI JP 2000-218321	A	20000719		

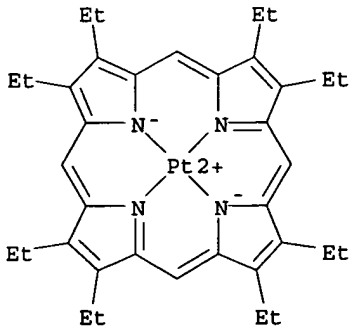
2000 priority

AB Electroluminescent devices are described which comprise a pair of electrodes sandwiching an active layer comprising a mixt. of a liq. crystal compd. with a phosphorescent compd. The liq. crystal compd. may have a discotic phase or a smectic phase; the phosphorescent compd. preferably has a planar mol. skeleton. The liq. crystal may also be phosphorescent. The liq. crystals aid carrier transport.

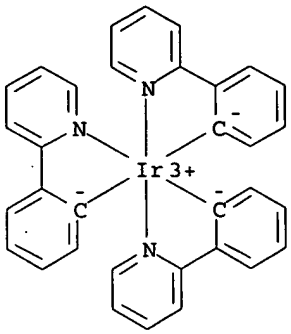
IT **31248-39-2**, Platinum octaethylporphyrin **94928-86-6**
RL: DEV (Device component use); USES (Uses)
(electroluminescent devices using phosphorescent compds. in liq. crystal hosts)

RN 31248-39-2 HCAPLUS
CN Platinum, [2,3,7,8,12,13,17,18-octaethyl-21H,23H-porphinato(2-)-.kappa.N21,.kappa.N22,.kappa.N23,.kappa.N24]-, (SP-4-1)- (9CI) (CA INDEX NAME)

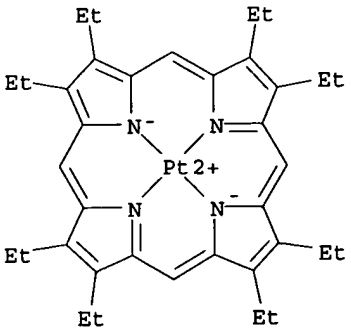
Sheet 1 of 2



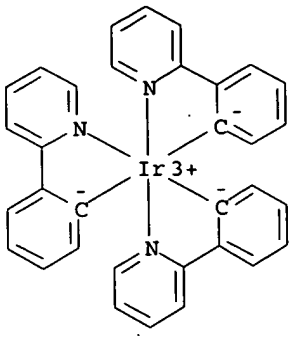
RN 94928-86-6 HCAPLUS
CN Iridium, tris[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-22)- (9CI) (CA INDEX NAME)


N
C
N
Ir 3+
C
C
N

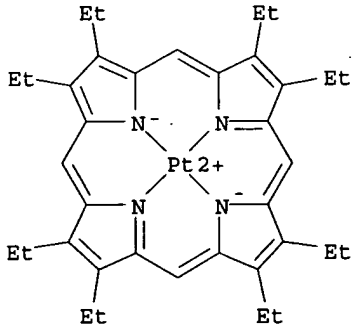
L96 ANSWER 18 OF 19 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2000:751077 HCAPLUS
DN 134:107416
TI Transient analysis of organic electrophosphorescence. II. Transient analysis of triplet-triplet annihilation
AU Baldo, M. A.; Adachi, C.; Forrest, S. R.
CS Center for Photonics and Optoelectronic Materials (POEM), Department of Electrical Engineering and the Princeton Materials Institute, Princeton University, Princeton, NJ, 08544, USA
SO Physical Review B: Condensed Matter and Materials Physics (2000), 62(16), 10967-10977
CODEN: PRBMDO; ISSN: 0163-1829
PB American Physical Society
DT Journal
LA English
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 76
AB In the preceding paper, Paper I [Phys. Rev. B 62, 10,958(2000)], the authors studied the formation and diffusion of excitons in several phosphorescent guest-host mol. org. systems. The obsd. decrease in electrophosphorescent intensity in org. light-emitting devices at high current densities (1998) is principally due to triplet-triplet annihilation. Using parameters extd. from transient phosphorescent decays, the authors model the quantum efficiency vs. current characteristics of electrophosphorescent devices. The increase in luminance obsd. for phosphors with short excited-state lifetimes is due primarily to reduced triplet-triplet annihilation. The authors also derive an expression for a limiting c.d. (J0) above which triplet-triplet annihilation dominates. The expression for J0 allows one to establish the criteria for identifying useful phosphors and to assist in the optimized design of electrophosphorescent mols. and device structures.
IT **31248-39-2**
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(transient anal. of triplet-triplet annihilation of compds. contg.)
RN 31248-39-2 HCAPLUS
CN Platinum, [2,3,7,8,12,13,17,18-octaethyl-21H,23H-porphinato(2-)-.kappa.N21,.kappa.N22,.kappa.N23,.kappa.N24]-, (SP-4-1)- (9CI) (CA INDEX NAME)



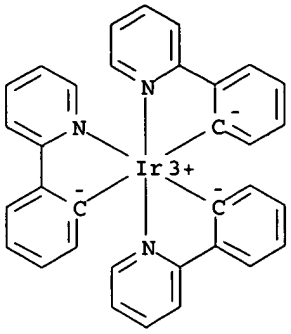
IT **94928-86-6**, Tris(2-phenyl-pyridine)iridium
RL: PRP (Properties)
(transient anal. of triplet-triplet annihilation of compds. contg.)
RN 94928-86-6 HCAPLUS
CN Iridium, tris[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-22)- (9CI) (CA INDEX NAME)


N
C
N
Ir 3+
C
C
N

L96 ANSWER 19 OF 19 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2000:751076 HCAPLUS
DN 134:92793
TI Transient analysis of organic electrophosphorescence: I. Transient analysis of triplet energy transfer
AU Baldo, M. A.; Forrest, S. R.
CS Center for Photonics and Optoelectronic Materials (POEM), Department of Electrical Engineering and the Princeton Materials Institute, Princeton University, Princeton, NJ, 08544, USA
SO Physical Review B: Condensed Matter and Materials Physics (2000), 62(16), 10958-10966
CODEN: PRBMDO; ISSN: 0163-1829
PB American Physical Society
DT Journal
LA English
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 22, 76
AB The authors examine triplet-exciton dynamics in several phosphorescent org. guest-host systems. In this 1st of 2 papers, transient studies are used to understand triplet energy transfer between mols. and also to ascertain the relative importance under elec. injection of charge trapping and direct exciton formation on phosphorescent guest mols. As an example, the authors study the distribution of triplet excitons as they diffuse through amorphous films of tris(8-hydroxyquinoline) Al (Alq3). Triplet transport in Alq3 is dispersive, and for high concns. of triplets the authors find an av. lifetime of .tau.=25 .+-. 15 .mu.s and a diffusion coeff. of DT = (8 .+-. 5).times.10-8 cm2/s. The understanding of the formation and transport of triplets in a host material is extended in the following paper [Phys. Rev. B 62, 10,967(2000)] to the study of nonlinearities in the electroluminescent decay of phosphorescent org. guest materials. Finally, the authors summarize the principle determinants of the efficiency of org. electrophosphorescent devices.
IT **31248-39-2 94928-86-6**, Tris(2-phenyl-pyridine)iridium
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(transient anal. of triplet energy transfer in org. guest-host systems contg.)
RN 31248-39-2 HCAPLUS
CN Platinum, [2,3,7,8,12,13,17,18-octaethyl-21H,23H-porphinato(2-)-.kappa.N21,.kappa.N22,.kappa.N23,.kappa.N24]-, (SP-4-1)- (9CI) (CA INDEX NAME)



RN 94928-86-6 HCAPLUS
CN Iridium, tris[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-22)- (9CI) (CA INDEX NAME)


N
C
Ir 3+
C
C
N

L100 ANSWER 7 OF 11 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2002:658190 HCAPLUS
DN 137:208156
TI Metal-containing dendrimers
IN Burn, Paul Leslie; Christou, Victor; Lo, Shi-Chun; Pillow, Jonathan Nigel Gerard; Lupton, John Mark; Samuel, Ifor David William
PA Isis Innovation Limited, UK
SO PCT Int. Appl., 77 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C08K005-56
ICS C09K011-00; **C09K011-06**; H01L051-00; H01L051-30; C08G083-00
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 37, 76, 78
FAN.CNT 1

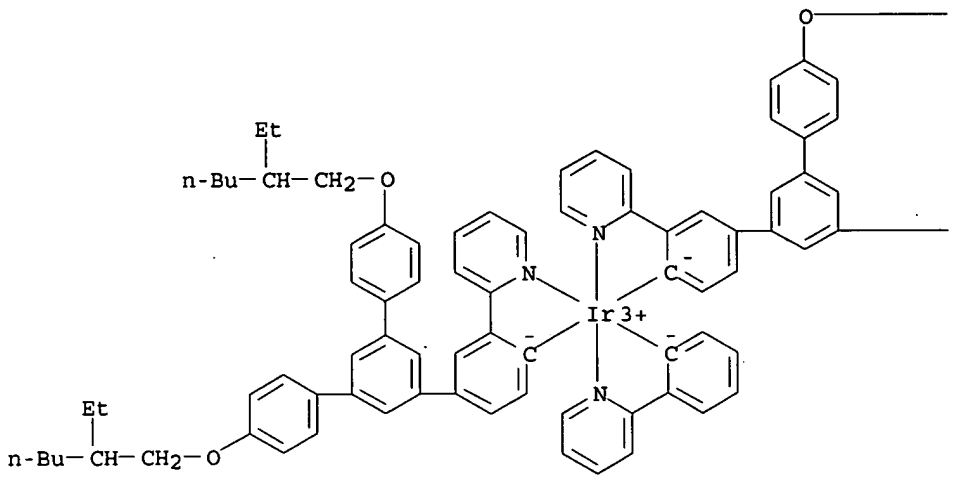
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2002066552	A1	20020829	WO 2002-GB750	20020220
PRAI GB 2001-4175	A	20010220		
GB 2001-6307	A	20010314		

AB Light-emitting devices are described which comprise .gtoreq.1 layer that contains an organometallic dendrimer with a metal cation as part of its core, the core not comprising a magnesium-chelated porphyrin. Organometallic dendrimers which comprise a metal cation as part of its core and .gtoreq.2 dendrons are described in which .gtoreq.1 of the dendrons is conjugated, the dendrimer is luminescent in the solid state, and the core does not comprise a magnesium-chelated porphyrin. Blends of the organometallic dendrimers and a corresponding nonmetallic dendrimer having the same dendritic structure as that of the organometallic dendrimer are also described. Methods for producing dendrimers are described which entail providing a core by forming a complex between a metal cation and .gtoreq.2 coordinating groups, at least two of the the groups bearing a reactive functionality; and treating the core thus provided with .gtoreq.2 dendrons which were functionalized to render them reactive towards the reactive functionalities present in the core, .gtoreq.1 of the dendrons being conjugated. Methods for producing dendrimers are also described which entail attaching a coordinating group to each of .gtoreq.2 dendrons; forming a complex between the coordinating groups and a metal cation; and optionally further treating the complex with .gtoreq.1 addnl. coordinating ligands.
IT **453538-22-2P 453538-23-3P 453538-24-4P**
453538-25-5P 453559-39-2P 453560-17-3P
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(metal-contg. dendrimers and their prodn. and blends contg. them and light-emitting devices using them)
RN 453538-22-2 HCAPLUS
CN Iridium, bis[4''-[(2-ethylhexyl)oxy]-5'-[4-[(2-ethylhexyl)oxy]phenyl]-3-(2-pyridinyl-.kappa.N)[1,1':3',1''-terphenyl]-4-yl-.kappa.C][2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-43)- (9CI) (CA INDEX NAME)

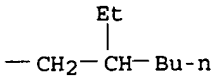
Sheet 1 of 8

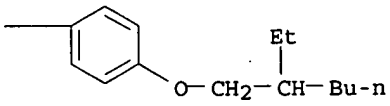
3/14/01 priority

PAGE 1-A



PAGE 1-B





RN 453538-23-3 HCAPLUS
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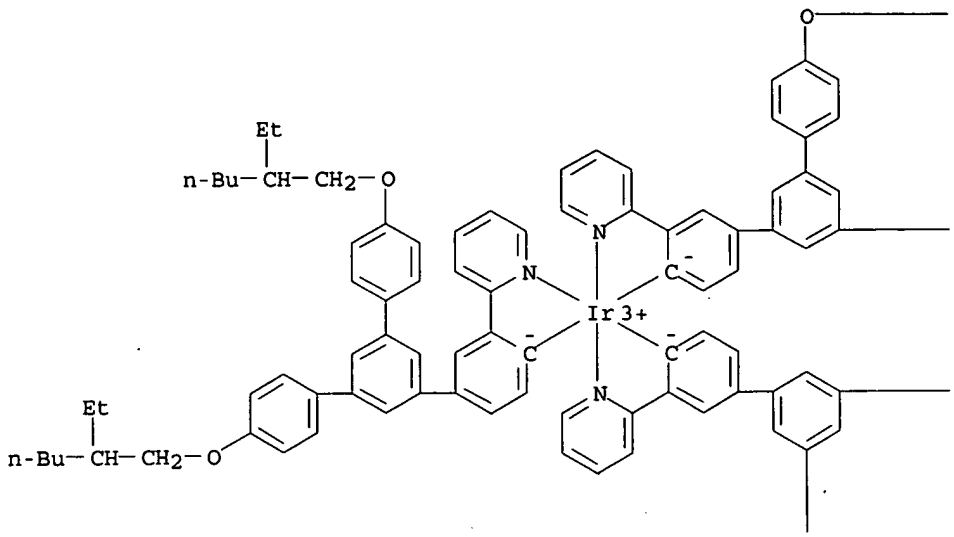
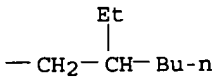
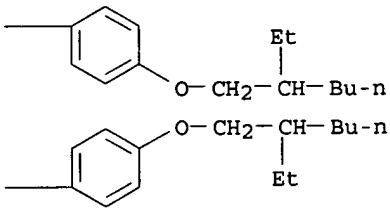
PAGE 1-A



PAGE 1-B





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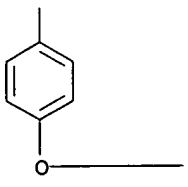
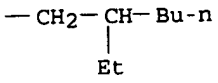
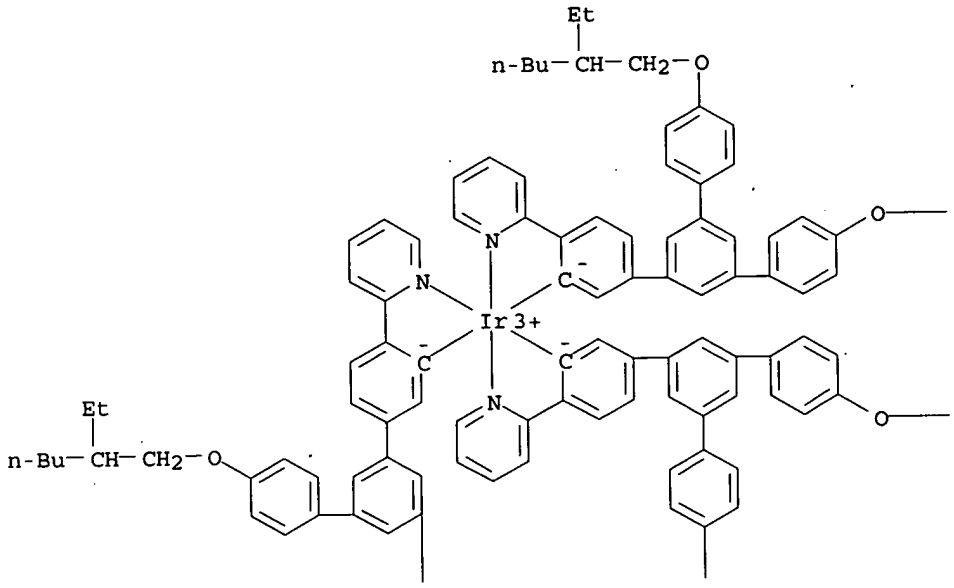


PAGE 2-B



RN 453538-24-4 HCAPLUS
CN Iridium, tris[4''-[(2-ethylhexyl)oxy]-5'-[4-[(2-ethylhexyl)oxy]phenyl]-4-(2-pyridinyl-.kappa.N)[1,1':3',1''-terphenyl]-3-yl-.kappa.C]-, (OC-6-22)-(9CI) (CA INDEX NAME)

PAGE 1-A



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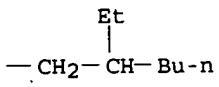

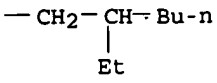

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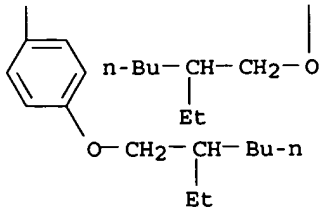
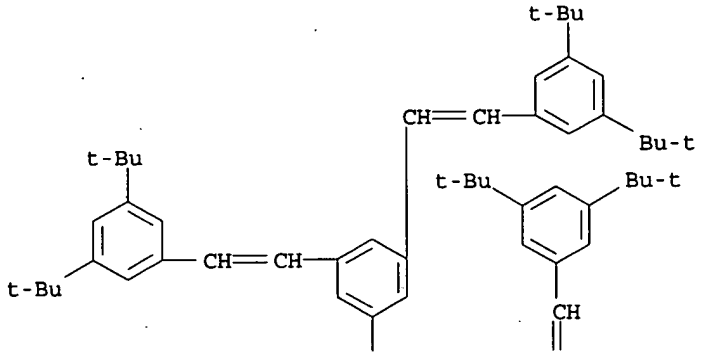
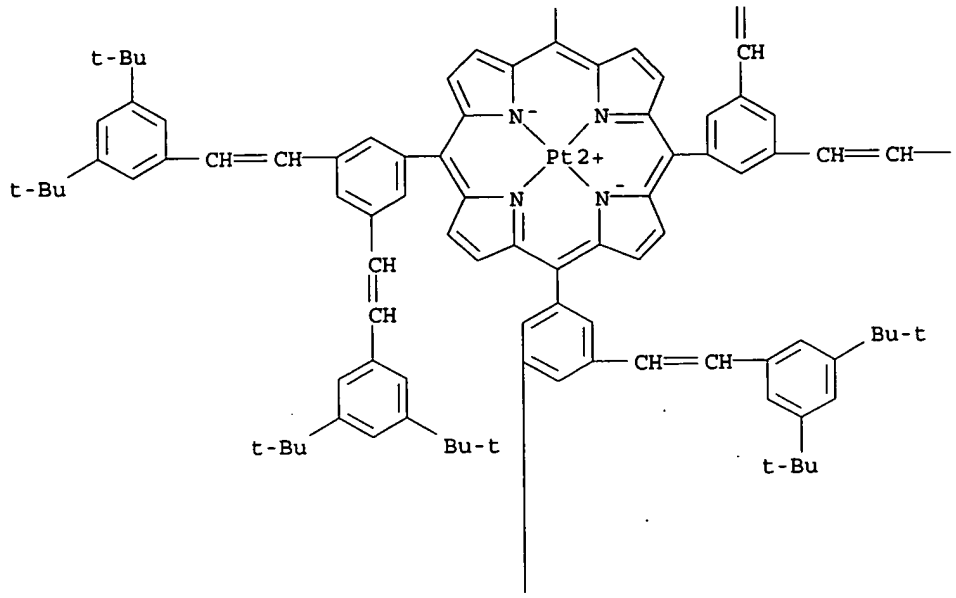


RN 453538-25-5 HCAPLUS
CN Platinum, [5,10,15,20-tetrakis[3,5-bis[2-[3,5-bis(1,1-dimethylethyl)phenyl]ethenyl]phenyl]-21H,23H-porphinato(2-)-.kappa.N21,.kappa.N22,.kappa.N23,.kappa.N24]-, (SP-4-1)- (9CI) (CA INDEX NAME)

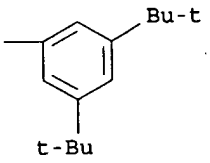
PAGE 1-A



PAGE 2-A



PAGE 2-B



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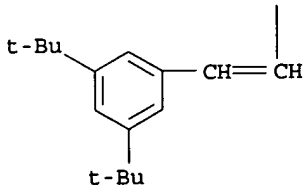


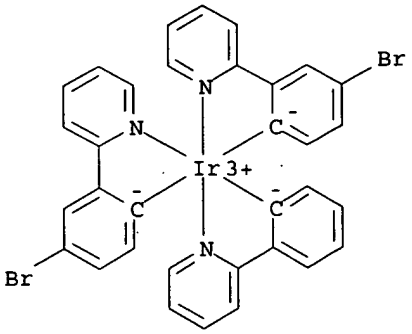
RN 453559-39-2 HCAPLUS
CN Platinum, [5,10,15,20-tetrakis[3,5-bis[2-[3,5-bis[2-[3,5-bis(1,1-dimethylethyl)phenyl]ethenyl]phenyl]ethenyl]phenyl]-21H,23H-porphinato(2-)-.kappa.N21,.kappa.N22,.kappa.N23,.kappa.N24]-, (SP-4-1)- (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 453560-17-3 HCAPLUS
CN Iridium, tris[5''-[4,4''-bis[(2-ethylhexyl)oxy][1,1':3',1''-terphenyl]-5'-yl]-4-[(2-ethylhexyl)oxy]-5'-[4-[(2-ethylhexyl)oxy]phenyl]-3'''-(2-pyridinyl-.kappa.N)[1,1':2',1'':3'',1'''-quaterphenyl]-4'''-yl-.kappa.C]-, (OC-6-22)- (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

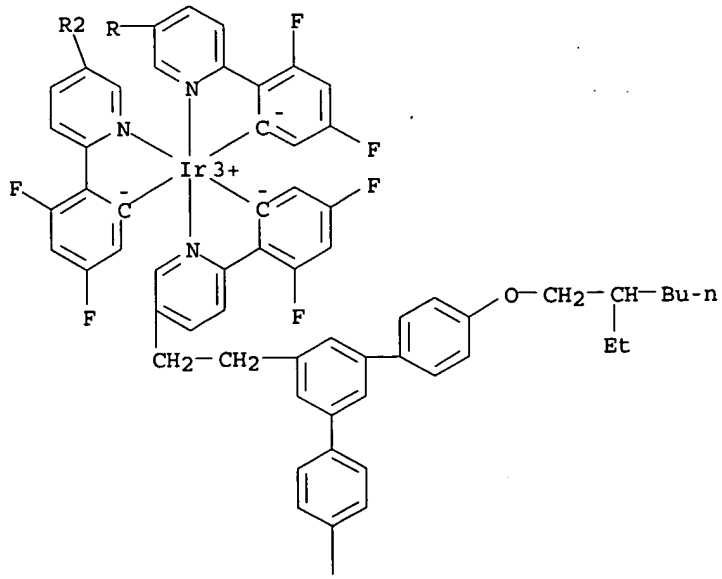
IT **453538-21-1P 453538-27-7P 453560-26-4P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(metal-contg. dendrimers and their prodn. and blends contg. them and light-emitting devices using them)

RN 453538-21-1 HCAPLUS
CN Iridium, bis[4-bromo-2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C][2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-43)- (9CI) (CA INDEX NAME)

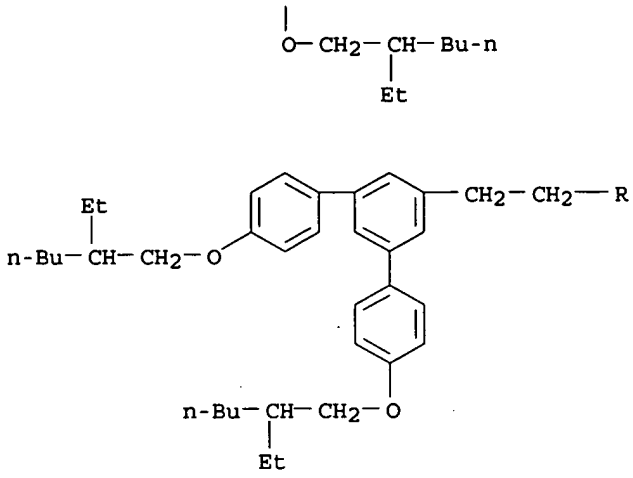


RN 453538-27-7 HCAPLUS
CN Iridium, tris[2-[5-[2-[4,4''-bis[(2-ethylhexyl)oxy][1,1':3',1''-terphenyl]-5'-yl]ethyl]-2-pyridinyl-.kappa.N]-3,5-difluorophenyl-.kappa.C]-, (OC-6-22)- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



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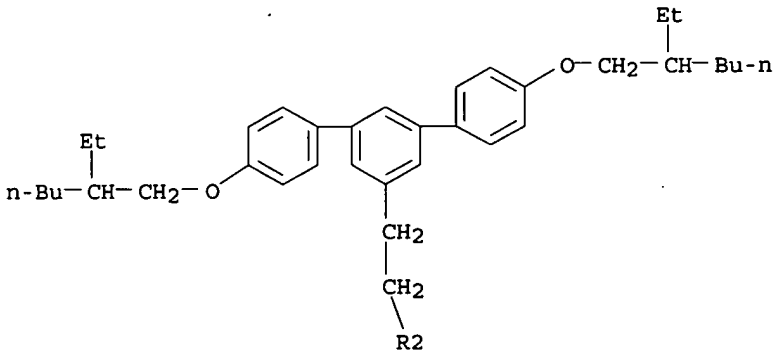


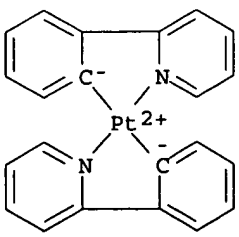
RN 453560-26-4 HCAPLUS
CN Iridium, tetrakis[5'-[4,4''-bis[(2-ethylhexyl)oxy][1,1':3',1''-terphenyl]-5'-yl]-4'''-[(2-ethylhexyl)oxy]-5''-[4-[(2-ethylhexyl)oxy]phenyl]-3-(2-pyridinyl-.kappa.N)[1,1':3',1'':3'',1'''-quaterphenyl]-4-yl-.kappa.C]di-.mu.-chlorodi-, stereoisomer (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L100 ANSWER 10 OF 11 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2002:221136 HCAPLUS
DN 136:254380
TI Organometallic complexes as phosphorescent emitters in organic LEDs
IN Thompson, Mark E.; Djurovich, Peter; Lamansky, Sergey; Murphy, Drew; Kwong, Raymond; Abdel-Razzaq, Feras; Forrest, Stephen R.; Baldo, Marc A.; Burrows, Paul E.
PA USA
SO U.S. Pat. Appl. Publ., 77 pp., Cont.-in-part of U. S. Ser. No. 274,609, abandoned.
CODEN: USXXCO
DT Patent
LA English
IC ICM **H05B033-14**
ICS **C09K011-06**
NCL 428690000
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 74, 76, 78
FAN.CNT 5

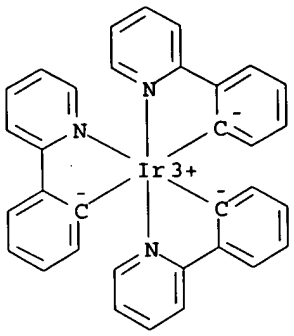
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002034656	A1	20020321	US 2001-883734	20010618
	US 6097147	A	20000801	US 1998-153144	19980914
	US 2003017361	A1	20030123	US 2002-171235	20020613
PRAI	US 1998-153144	A2	19980914		
	US 1999-274609	B2	19990323		
	US 1999-311126	B2	19990513		
	US 1999-452346	B2	19991201		
	US 2001-883734	A3	20010618		

OS MARPAT 136:254380
AB Emissive layers of org. light-emitting devices are described which comprise a phosphorescent organometallic compd. for enhancing the quantum efficiency of the org. light-emitting device. Preferably the emissive mol. is selected from the group of phosphorescent organometallic complexes, including cyclometallated platinum, iridium, and osmium complexes. The org. light-emitting devices optionally contain an exciton blocking layer. In particular, org. light-emitting devices with an emitter layer comprising organometallic complexes of transition metals of formula L2MX, wherein L and X are distinct bidentate ligandss and M is a metal which forms octahedral complexes, are described. A method of making a compn. of the formula L2MX is described which entails combining a bridged dimer of formula L2M(.mu.-Cl)2ML2 with a Bronsted acid XH to make the desired organometallic complex. Display devices incorporating the light-emitting devices are also described.
IT **88821-71-0** **94928-86-6**, fac-Tris(2-phenylpyridine)iridium
180971-61-3
RL: DEV (Device component use); USES (Uses)
(organometallic complexes and their prepn. and org. light-emitting devices using them as phosphorescent emitters)
RN 88821-71-0 HCAPLUS
CN Platinum, bis[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (SP-4-2)- (9CI) (CA INDEX NAME)

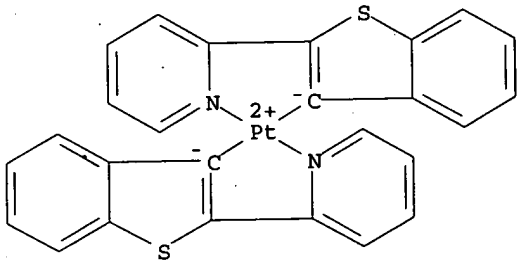


RN 94928-86-6 HCAPLUS

CN Iridium, tris[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-22)- (9CI) (CA INDEX NAME)

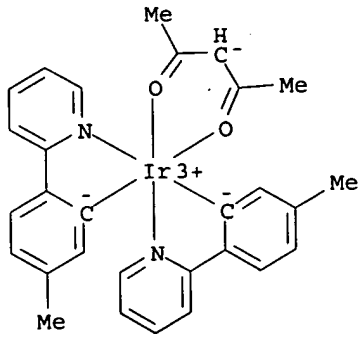


RN 180971-61-3 HCAPLUS
CN Platinum, bis[2-(2-pyridinyl-.kappa.N)benzo[b]thien-3-yl-.kappa.C]-, (SP-4-2)- (9CI) (CA INDEX NAME)

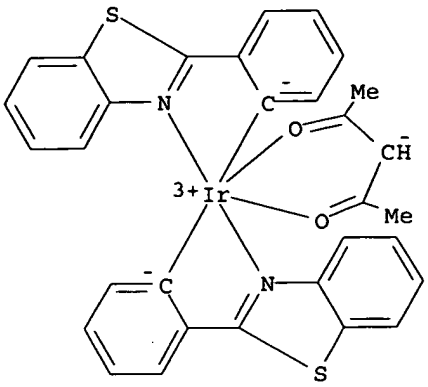


IT **337526-86-0P 337526-88-2P 337526-89-3P**
337526-98-4P 343978-86-9P 343978-88-1P
343978-92-7P 343978-96-1P 343978-99-4P
344426-19-3P
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(organometallic complexes and their prepn. and org. light-emitting devices using them as phosphorescent emitters)

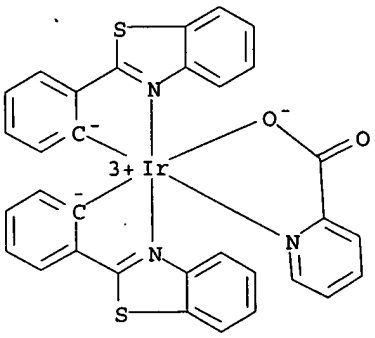
RN 337526-86-0 HCAPLUS
CN Iridium, bis[5-methyl-2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C](2,4-pentanedionato-.kappa.O,.kappa.O')-, (OC-6-33)- (9CI) (CA INDEX NAME)



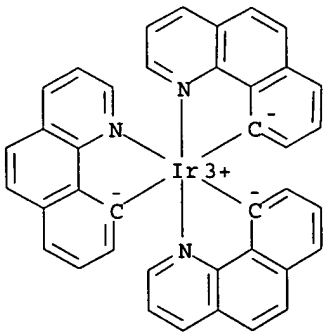
RN 337526-88-2 HCAPLUS
CN Iridium, bis[2-(2-benzothiazolyl-.kappa.N3)phenyl-.kappa.C](2,4-pentanedionato-.kappa.O,.kappa.O')-, (OC-6-33)- (9CI) (CA INDEX NAME)



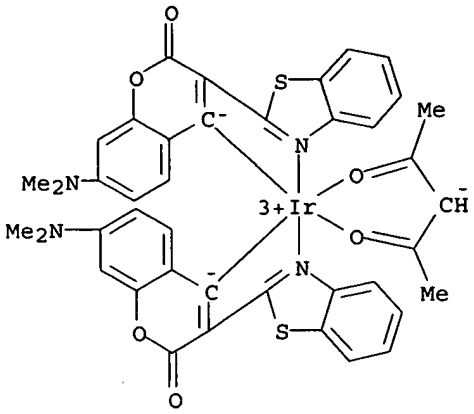
RN 337526-89-3 HCAPLUS
CN Iridium, bis[2-(2-benzothiazolyl-.kappa.N3)phenyl-.kappa.C](2-pyridinecarboxylato-.kappa.N1,.kappa.O2)-, (OC-6-42)- (9CI) (CA INDEX NAME)



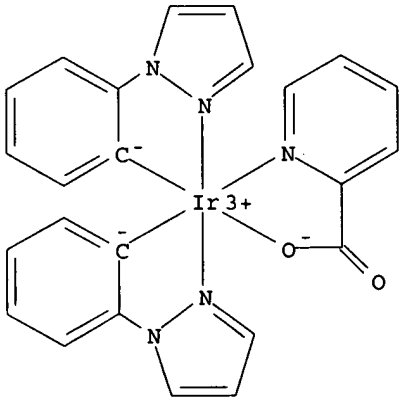
RN 337526-98-4 HCAPLUS
CN Iridium, tris(benzo[h]quinolin-10-yl-.kappa.C,.kappa.N)-, (OC-6-22)- (9CI) (CA INDEX NAME)



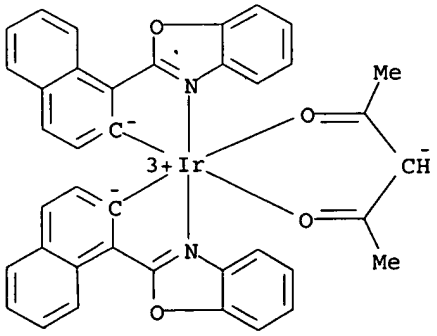
RN 343978-86-9 HCAPLUS
CN Iridium, bis[3-(2-benzothiazolyl-.kappa.N3)-7-(dimethylamino)-2-oxo-2H-1-benzopyran-4-yl-.kappa.C](2,4-pentanedionato-.kappa.O,.kappa.O')-, (OC-6-33)- (9CI) (CA INDEX NAME)



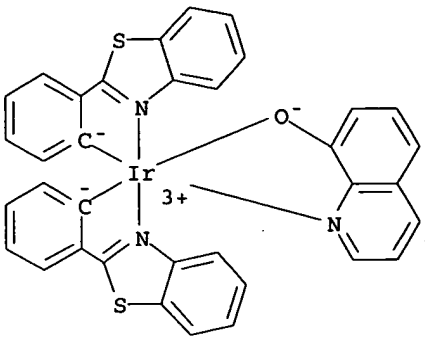
RN 343978-88-1 HCAPLUS
CN Iridium, bis[2-(1H-pyrazol-1-yl-.kappa.N2)phenyl-.kappa.C](2-pyridinecarboxylato-.kappa.N1,.kappa.O2)-, (OC-6-42)- (9CI) (CA INDEX NAME)



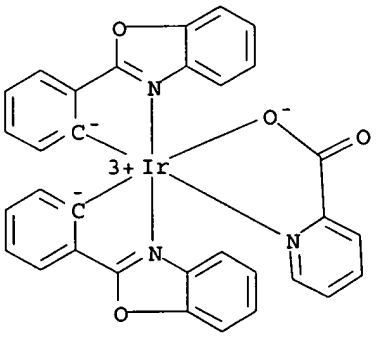
RN 343978-92-7 HCAPLUS
CN Iridium, bis[1-(2-benzoxazolyl-.kappa.N3)-2-naphthalenyl-.kappa.C](2,4-pentanedionato-.kappa.O,.kappa.O')-, (OC-6-33)- (9CI) (CA INDEX NAME)



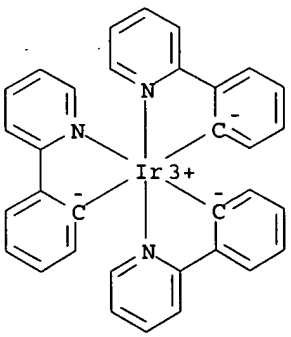
RN 343978-96-1 HCAPLUS
CN Iridium, bis[2-(2-benzothiazolyl-.kappa.N3)phenyl-.kappa.C](8-quinolinolato-.kappa.N1,.kappa.O8)-, (OC-6-42)- (9CI) (CA INDEX NAME)



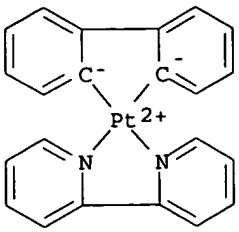
RN 343978-99-4 HCAPLUS
CN Iridium, bis[2-(2-benzoxazolyl-.kappa.N3)phenyl-.kappa.C](2-pyridinecarboxylato-.kappa.N1,.kappa.O2)-, (OC-6-42)- (9CI) (CA INDEX NAME)



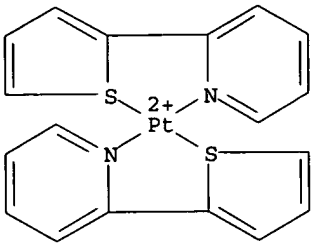
RN 344426-19-3 HCAPLUS
CN Iridium, tris[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-21)- (9CI) (CA INDEX NAME)



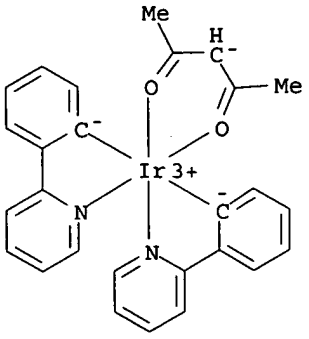
IT **110077-26-4P 138736-22-8P 337526-85-9P**
337526-87-1P 337526-91-7P 343978-75-6P
343978-76-7P 343978-77-8P 343978-78-9P
343978-79-0P
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(organometallic complexes and their prepn. and org. light-emitting devices using them as phosphorescent emitters)
RN 110077-26-4 HCAPLUS
CN Platinum, [1,1'-biphenyl]-2,2'-diyl(2,2'-bipyridine-.kappa.N1,.kappa.N1')-, (SP-4-2)- (9CI) (CA INDEX NAME)



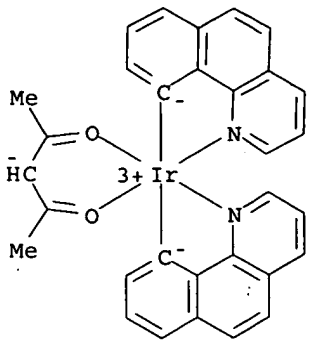
RN 138736-22-8 HCAPLUS
CN Platinum(2+), bis[2-(2-thienyl-.kappa.S)pyridine-.kappa.N]- (9CI) (CA INDEX NAME)



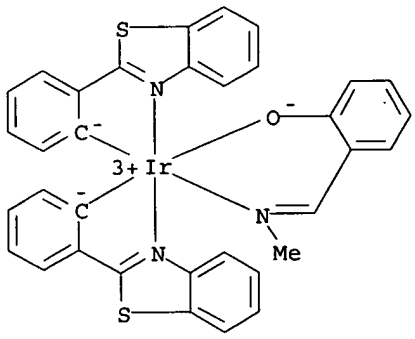
RN 337526-85-9 HCAPLUS
CN Iridium, (2,4-pentanedionato-.kappa.O,.kappa.O')bis[2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-33)- (9CI) (CA INDEX NAME)



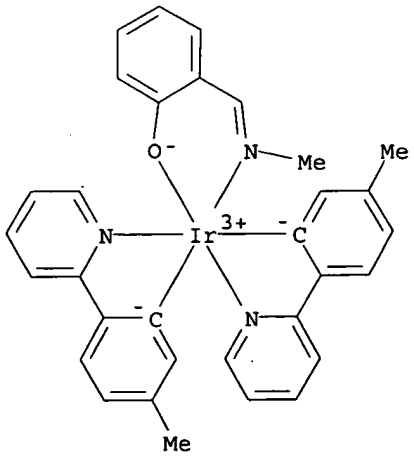
RN 337526-87-1 HCAPLUS
CN Iridium, bis(benzo[h]quinolin-10-yl-.kappa.C,.kappa.N)(2,4-pentanedionato-.kappa.O,.kappa.O')-, (OC-6-33)- (9CI) (CA INDEX NAME)



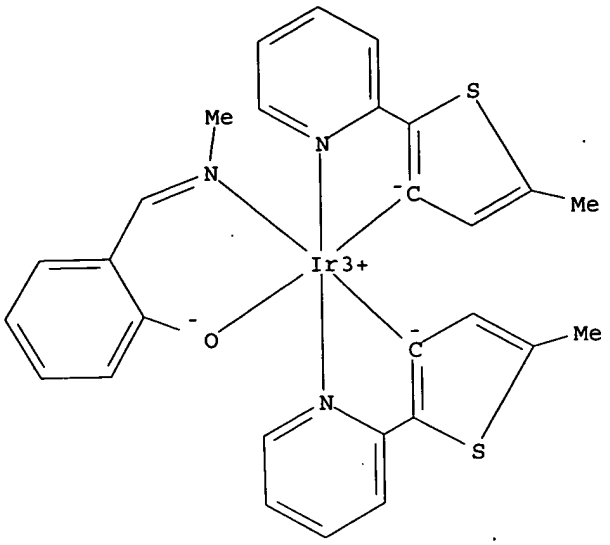
RN 337526-91-7 HCAPLUS
CN Iridium, bis[2-(2-benzothiazolyl-.kappa.N3)phenyl-.kappa.C][2-[(methylimino-.kappa.N)methyl]phenolato-.kappa.O]-, (OC-6-42)- (9CI) (CA INDEX NAME)



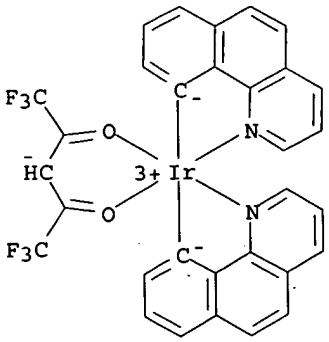
RN 343978-75-6 HCAPLUS
CN Iridium, [2-[(methylimino-.kappa.N)methyl]phenolato-.kappa.O]bis[5-methyl-2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]-, (OC-6-44)- (9CI) (CA INDEX NAME)



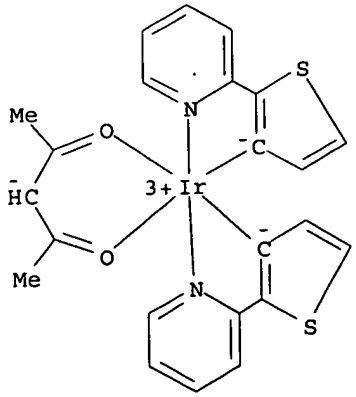
RN 343978-76-7 HCAPLUS
CN Iridium, [2-[(methylimino-.kappa.N)methyl]phenolato-.kappa.O]bis[5-methyl-2-(2-pyridinyl-.kappa.N)-3-thienyl-.kappa.C]-, (OC-6-44)- (9CI) (CA INDEX NAME)



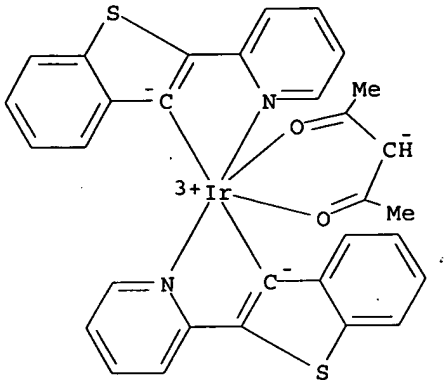
RN 343978-77-8 HCAPLUS
CN Iridium, bis(benzo[h]quinolin-10-yl-.kappa.C,.kappa.N)(1,1,1,5,5,5-hexafluoro-2,4-pentanedionato-.kappa.O,.kappa.O')-, (OC-6-33)- (9CI) (CA INDEX NAME)



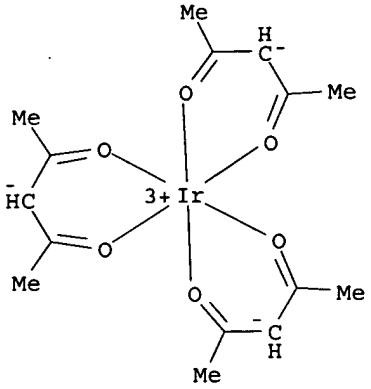
RN 343978-78-9 HCAPLUS
CN Iridium, (2,4-pentanedionato-.kappa.O,.kappa.O')bis[2-(2-pyridinyl-.kappa.N)-3-thienyl-.kappa.C]-, (OC-6-33)- (9CI) (CA INDEX NAME)



RN 343978-79-0 HCAPLUS
CN Iridium, (2,4-pentanedionato-.kappa.O,.kappa.O')bis[2-(2-pyridinyl-.kappa.N)benzo[b]thien-3-yl-.kappa.C]-, (OC-6-33)- (9CI) (CA INDEX NAME)



IT **15635-87-7 343978-74-5**
RL: RCT (Reactant); RACT (Reactant or reagent)
(organometallic complexes and their prepn. and org. light-emitting devices using them as phosphorescent emitters)
RN 15635-87-7 HCAPLUS
CN Iridium, tris(2,4-pentanedionato-.kappa.O,.kappa.O')-, (OC-6-11)- (9CI) (CA INDEX NAME)



RN 343978-74-5 HCAPLUS
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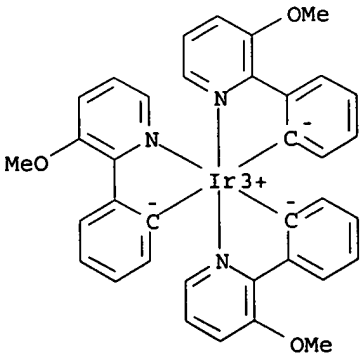
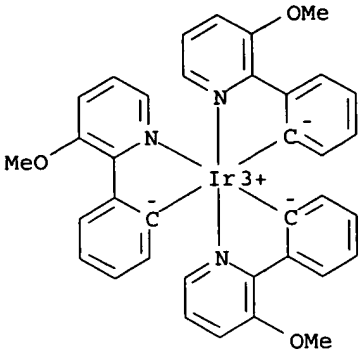
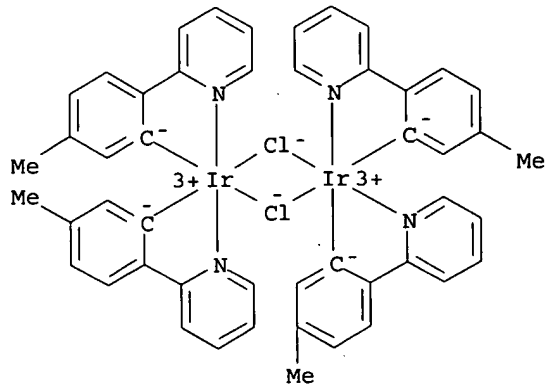


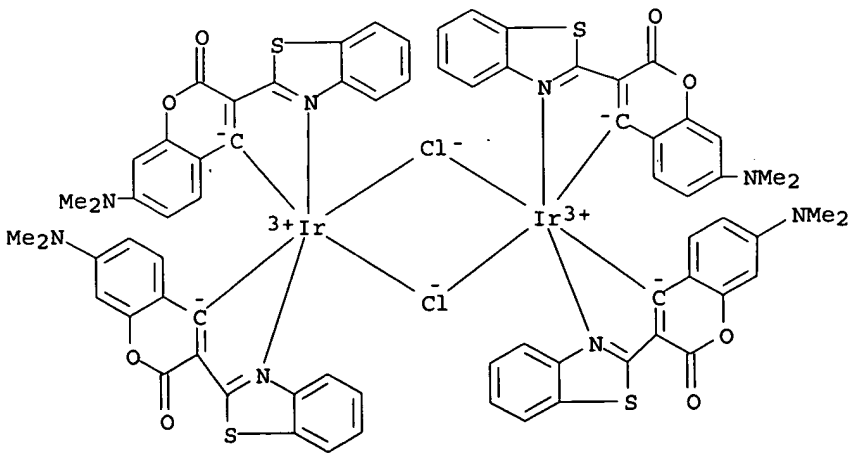


IT **116563-45-2P 343978-82-5P 343978-90-5P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(organometallic complexes and their prepn. and org. light-emitting devices using them as phosphorescent emitters)

RN 116563-45-2 HCAPLUS
CN Iridium, di-.mu.-chlorotetrakis[5-methyl-2-(2-pyridinyl-.kappa.N)phenyl-.kappa.C]di-, stereoisomer (9CI) (CA INDEX NAME)



RN 343978-82-5 HCAPLUS
CN Iridium, tetrakis[3-(2-benzothiazolyl-.kappa.N3)-7-(dimethylamino)-2-oxo-2H-1-benzopyran-4-yl-.kappa.C]di-.mu.-chlorodi- (9CI) (CA INDEX NAME)



RN 343978-90-5 HCAPLUS
CN Iridium, tetrakis[1-(2-benzoxazolyl-.kappa.N3)-2-naphthalenyl-.kappa.C]di-.mu.-chlorodi- (9CI) (CA INDEX NAME)

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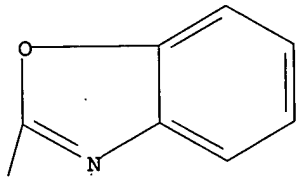

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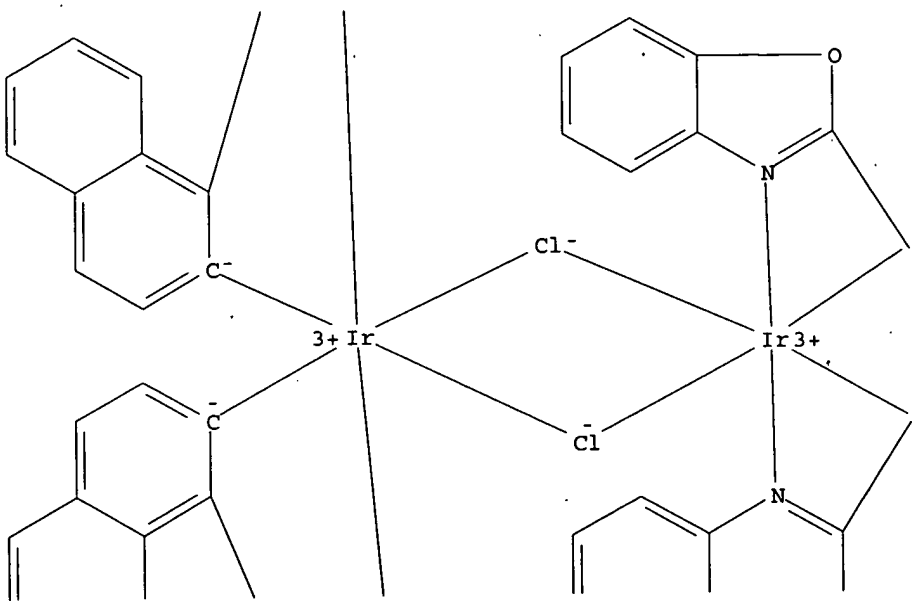
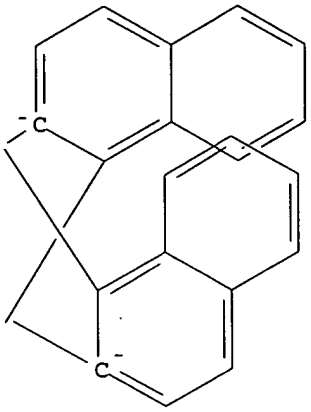
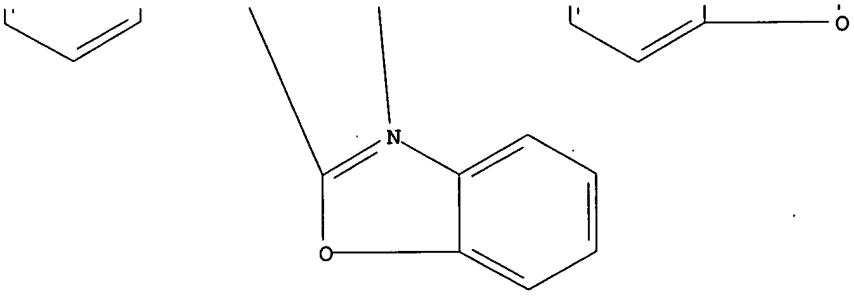


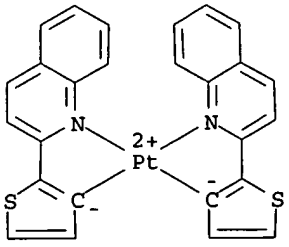
PAGE 2-B



PAGE 3-A



IT **128025-34-3P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(organometallic complexes and their prepn. and org. light-emitting devices using them as phosphorescent emitters)
RN 128025-34-3 HCAPLUS
CN Platinum, bis[2-(2-quinolinyl-.kappa.N)-3-thienyl-.kappa.C]-, (SP-4-2)-(9CI) (CA INDEX NAME)



L116 ANSWER 14 OF 38 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 2001:188610 HCAPLUS
DN 135:99140
TI Phosphorescent emission from organic **electroluminescent** device
AU Wu, Zhefu; Zhang, Xianmin; Sun, Runguang; Li, Wenlian; Chen, Kangsheng
CS Department of Information and Electronic Engineering, Zhejiang University, Hangzhou, 310027, Peop. Rep. China
SO Proceedings of SPIE-The International Society for Optical Engineering (2000), 4086(Thin Film Physics and Applications), 761-764
CODEN: PSISDG; ISSN: 0277-786X
PB SPIE-The International Society for Optical Engineering
DT Journal
LA English
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
AB A novel org. **electroluminescent** device with EuGd complex (Eu0.1Gd0.9)(TTA)3(TPPO)2 as an emitter is presented, and the characteristics of the device were studied. The phosphorescence emission from the device are obsd., which are discussed in terms of yields of phosphorescence from the triplet **excited state** of the Gd and Eu chelates due to the strong protuberance to the **spin** -orbit levels of the ligands by the paramagnetic Gd3+ ions. Both the photoluminescent and **electroluminescent** efficiencies at different temp. between 77 K and 300 K are measured by integrating sphere method. The authors' results show that the phosphorescent emission from the triplets excited sate might be useful to improve the **quantum** efficiency of org. **electroluminescent** devices.
IT 12121-29-8D, solid soln. with gadolinium analog 200292-99-5D, solid soln. with europium analog
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(phosphorescent emission from org. **electroluminescent** device)
IT 15082-28-7 25067-59-8, Polyvinylcarbazole
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(phosphorescent emission from org. **electroluminescent** device)

L116 ANSWER 21 OF 38 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 1999:428079 HCAPLUS
DN 131:94251
TI Inorganic-organic hybrid structured LEDs
AU Gebauer, T.; Schmid, G.
CS Institut Anorganische Chemie, Univ. Essen, Essen, D-45117, Germany
SO Zeitschrift fuer Anorganische und Allgemeine Chemie (1999), 625(7), 1124-1128
CODEN: ZAACAB; ISSN: 0044-2313
PB Wiley-VCH Verlag GmbH
DT Journal
LA English
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 76
AB Three-layered heterocontact LEDs were generated by **spin**-coating processes. Perovskites of the type [Ph(Me)CHNH3]2PbX4 (X = Cl, Br) on ITO glass served as p-semiconductors, while 1,3,5-[5-(4-tert-butylphenyl)-2-oxadiazyl]benzene (Starburst) in polystyrene was selected as the org. n-semiconductor. As a zone for the **electron-hole recombination** between p- and n-semiconductor layer a poly(N-vinylcarbazole)-layer, doped with 3-(2-benzothiazolyl)-7-diethylamino-coumarin (coumarin6), as emitter mol. was used. A Mg:Ag electrode served as the cathode on the Starburst:polystyrene blend. Both diodes showed green luminescence at 7 V. The external **quantum** yield of the diode with the PbCl42- perovskite was 0.4%, but only 0.06% for PbBr42-. This is due to the different band structures of the layered perovskites.
IT 131457-16-4, Bis(phenethylammonium) tetrabromoplumbate(2-) 131457-18-6, Bis(phenethylammonium) tetrachloroplumbate(2-) 148044-16-0, 1,3,5-[5-(4-tert-Butylphenyl)-2-oxadiazyl]benzene
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(inorg.-org. hybrid structured LEDs with phenylethanammonium halogenoplumbates and Starburst semiconductor layers fabricated by **spin** coating and characterized by **electroluminescence** -c.d. curves)

L116 ANSWER 22 OF 38 HCAPLUS COPYRIGHT 2003 ACS on STN
AN 1999:351189 HCAPLUS
DN 131:108667
TI Ultrafast photogeneration mechanisms of triplet states in para-hexaphenyl
AU Zenz, C.; Cerullo, G.; Lanzani, G.; Graupner, W.; Meghdadi, F.; Leising, G.; De Silvestri, S.
CS Istituto di Matematica e Fisica, Istituto Nazionale per la Fisica della Materia, Universita di Sassari, Sassari, I-07100, Italy
SO Physical Review B: Condensed Matter and Materials Physics (1999), 59(22), 14336-14341
CODEN: PRBMDO; ISSN: 0163-1829
PB American Physical Society
DT Journal
LA English
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 74
AB The authors present femtosecond pump-probe measurements, both conventional and elec. field-assisted, on org. light-emitting devices based on para-hexaphenyl. The dominant triplet exciton generation mechanism is assigned to nongeminate bimol. **recombination** of photogenerated, **spin**-1/2 polarons. This process is active within a few hundred femtoseconds after photoexcitation and involves about 20% of the initially **excited states**. At higher photoexcitation densities, the authors observe an addnl. triplet generation mechanism, which occurs in the 10-ps time domain, due to fusion of singlet excitons and subsequent fission into correlated triplet pairs. The latter decay on the 102-ps time scale by geminate **recombination**.
IT 4499-83-6, p-Hexaphenyl
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(triplet exciton generation mechanism in single layer p-hexaphenyl light emitting device studied by femtosecond pump-probe measurements)
IT 7429-90-5, Aluminum, uses 50926-11-9, ITO
RL: DEV (Device component use); USES (Uses)
(ultrafast photogeneration mechanisms of triplet states in para-hexaphenyl)